ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE I INVESTIGATION

New Road
City of Niagara Falls

Site No. 932083
Niagara County

Date: January 1986

Prepared for:

New York State Department of Environmental Conservation

50 Wolf Road, Albany, New York 12233
Henry G. Williams, *Commissioner*

Division of Solid and Hazardous Waste
Norman H. Nosenchuck, P.E., *Director*

By:

ENGINEERING-SCIENCE
In Association With
DAMES & MOORE

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK PHASE I INVESTIGATIONS

NEW ROAD LANDFILL SITE
NYS SITE NUMBER 932083
CITY OF NIAGARA FALLS
NIAGARA COUNTY
NEW YORK STATE

Prepared For

DIVISION OF SOLID AND HAZARDOUS WASTE
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD
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DATE OF SUBMITTAL: JANUARY, 1986

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NEW ROAD LANDFILL

SECTION I

EXECUTIVE SUMMARY
NEW ROAD LANDFILL SITE

This report, prepared for the New York State Department of Environmental Conservation (NYSDEC), presents the results of the Phase I investigation for the New Road Landfill Site (NYS Site Number 932083, EPA Site Number D980507149) located in the City of Niagara Falls, Niagara County, New York (see Figure I-1).

SITE BACKGROUND

The New Road Landfill site, approximately 49 acres in size, was owned by the City of Niagara Falls during the 1950's (see Figure I-2). The city operated the site as an open dump for the disposal of non-combustible refuse and ash from the incineration of municipal waste (NCHD, 1982). No hazardous wastes were reportedly disposed on-site; however, in the 1950's, a fish kill occurred in Gill Creek located adjacent to the site. This incident was attributed to the leachate generated at the New Road Landfill site (NYSDEC Interagency Task Force). The New York State Power Authority assumed ownership of the disposal site in 1958 for the disposal of rock spoils from the construction of power project tunnels. The site was used for this purpose until the early 1960's (1962-63). The site was used during 1969 by the City of Niagara Falls for the open burning of combustible materials (i.e., trees, brush, leaves, etc.) (PASNY, 1985). With the exception of miscellaneous scavenger dumping, the site has remained inactive since approximately 1970.

In 1981, the City of Niagara Falls proposed using the New Road Landfill site for the construction of a sludge handling facility. An extensive hydrogeologic study was conducted and an environmental impact study was prepared. Groundwater samples collected from the monitoring wells installed during this investigation detected heavy metals including iron, lead, and chromium. Elevated levels for indicator parameters including chlorides, sulfates, specific conductance and pH were observed. Phenol was also found in high concentrations (i.e., above NYS GA Class Water Standards) in both the upgradient and downgradient wells (Malcolm Pirnie, 1981).

Analysis of additional groundwater samples (from three wells) collected by the USGS in 1982, detected heavy metals (i.e., iron, lead, manganese, and chromium) in concentrations exceeding NYS Water Quality Standards for Class GA Water. One priority pollutant and several non-priority organic constituents were also detected (USGS, 1983).

The proposed sludge handling facility was not constructed after gaining NYSDEC approval, however, the proposed plan is presently being reevaluated.

ASSESSMENT

In an attempt to quantify the risk associated with this site, the Hazard Ranking Scoring system (HRS) was applied as currently being used by the NYSDEC to evaluate abandoned hazardous waste sites in New York State. This system takes into account the types of wastes at the site, receptors, and transport routes to apply a numerical ranking of the site. As stated in 40 CFR Subpart H Section 300.81, the HRS scoring system was developed to be used in evaluating the relative potential of uncontrolled hazardous substance facilities to cause health or safety problems or ecological or environmental damage. It is assumed by the EPA that a uniform application of the ranking system in each state will permit EPA to identify those releases of hazardous substances that pose the greatest hazard to humans or the environment.

Under the HRS, three numerical scores are computed for each site, to express the relative risk or danger from the site, taking into account the population at risk, the potential for contamination of drinking water supplies, for direct human contact, and for destruction of sensitive ecological systems and other appropriate factors. The three scores are:

- S_M reflects the potential for harm to humans or the environment from migration of a hazardous substance away from the facility by routes involving groundwater, surface water or air. It is a composite of separate scores for each of the three routes (S_{GW} = groundwater route score, S_{SW} = surface water route score, and S_A = air route score).

- S_{FE} reflects the potential for harm from substances that can explode or cause fires.

- S_{DC} reflects the potential for harm from direct contact with hazardous substances at the facility (i.e., no migration need be involved).

The preliminary HRS score was:

S_M	=	7.03	S_A	=	0
S_{GW}	=	10.94	S_{FE}	=	0
S_{SW}	=	5.31	S_{DC}	=	0

These scores reflect the potentially high toxic nature of heavy metals and the shallow depth of the bedrock aquifer. Also, access to the site is not restricted; however, the waste material is covered with shot rock estimated to be several feet thick.

RECOMMENDATIONS

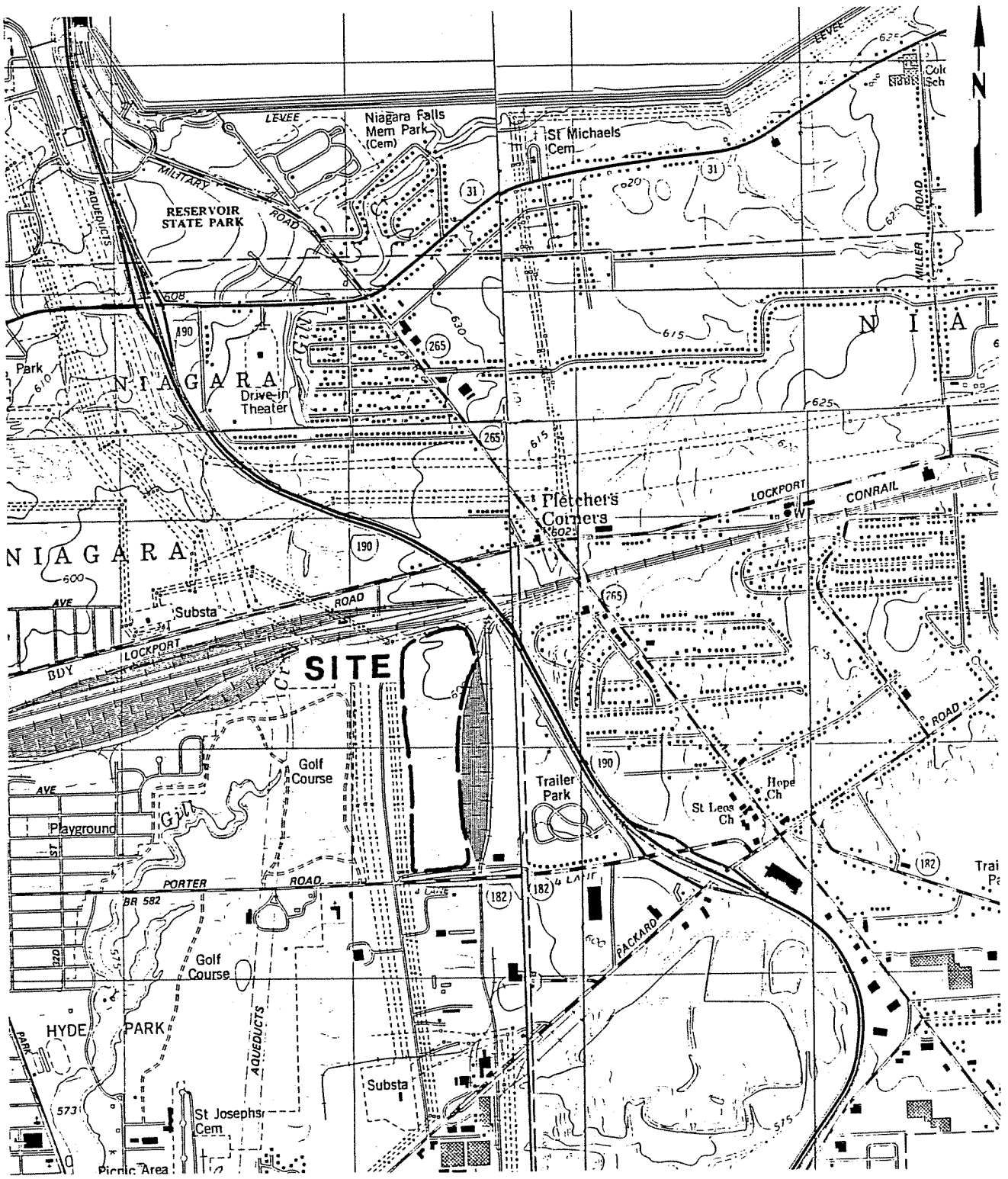
The following recommendations are made for the completion of Phase II:

- Groundwater monitoring system consisting of two upgradient wells located off-site east of the Conrail Rail Yard.

- Surface water and sediment monitoring system consisting of one upstream and one downstream location.

- Sample analyses to include priority pollutants.

The estimated man-hour requirements to complete Phase II are 516, while the estimated cost is $31,350.



REFERENCE: U.S.G.S. 7.5' Topographic Map
Niagara Falls, NY-ONT. (1980), Lewiston, NY-ONT. (1980), Tonawanda West, NY (1980) and Ransomville, NY (1980) Quadrangles

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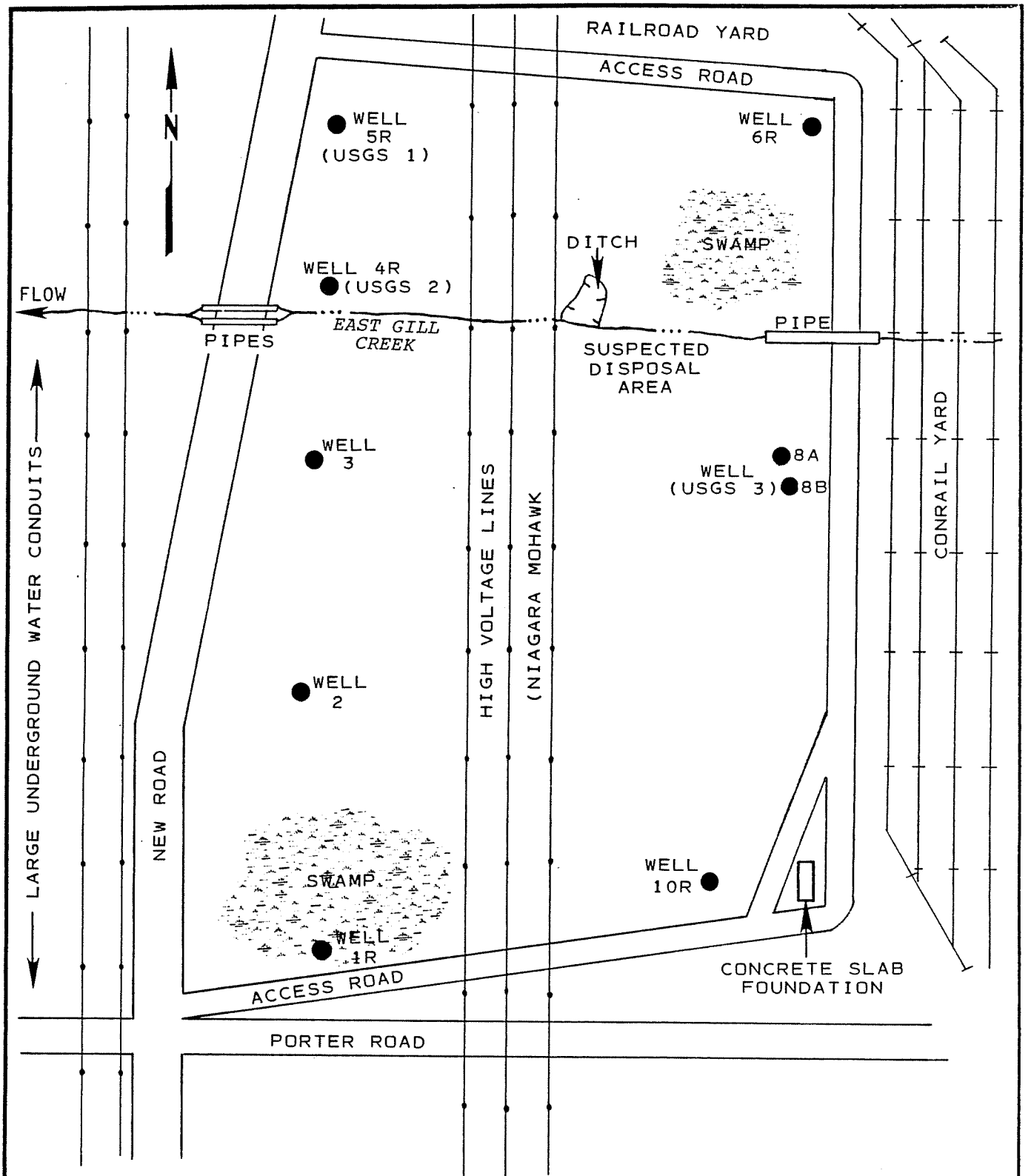
SITE LOCATION MAP

NEW ROAD

FIGURE I-1



NOT TO SCALE

* NOTE:

Well designations based on Malcolm Pirnie, 1980. R indicates a rock boring finished as a well.

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PLOT PLAN
NEW ROAD

FIGURE I-2

SECTION II

PURPOSE

The purpose of the Phase I investigation at the New Road Landfill site was to assess the hazard to the environment caused by the present condition of the site. This assessment is based on the Hazard Ranking System, which involves the compilation and rating of numerous geological, toxicological, environmental, chemical, and demographic factors and the calculation of an HRS score. Details of HRS implementation are included in Section V. During the initial portion of the investigation, available data and records, combined with information collected from a site inspection, were reviewed and evaluated. The investigation at this site focused on the disposal of materials by the City of Niagara Falls and the New York State Power Authority. Based on this initial evaluation of the New Road Landfill site, a Phase II Work Plan has been prepared for collecting any additional data needed to complete the HRS score. In addition, a cost estimate for the recommended Phase II work is provided.

SECTION III

SCOPE OF WORK

The scope of work for the New York State Inactive Site Investigation Program (Phase I) was to collect and review all available information necessary for the documentation and preparation of a Hazard Ranking System score and a Phase II work plan and cost estimate if required. The work activities performed included data collection and review, a site inspection, and interviews with knowledgeable individuals of past and present disposal activities at the site.

The sources contacted during this Phase I investigation included government agencies (federal, state and local), present site owners and operators, and any other individuals that may have knowledge of the site, as identified during the performance of the investigation. These sources are listed in Appendix A. The intent of the list is to identify all persons, departments, and/or agencies contacted during the third round of the Phase I investigations even though useful information may not have been collected from each source contacted.

SECTION IV

SITE ASSESSMENT

SITE HISTORY

The New Road Landfill site is a 49-acre parcel presently owned by the Power Authority of the State of New York (PASNY). During the 1950's, the City of Niagara Falls owned the site and operated it as a dump for the disposal of non-combustible refuse and ash residue from the incineration of municipal refuse (PASNY, 1985). Detailed records of the wastes disposed at the site were not kept but the site was not designated as an industrial waste disposal area. However, a fish kill occurred in Gill Creek between 1954 and 1955 which was attributed to the leachate flowing from the New Road Landfill site (NYSDEC Interagency Task Force). Ownership of the site was assumed by PASNY in 1958 (PASNY, County, 1985).

The site was used by PASNY for the disposal of rock spoils from the construction of power project tunnels until the early 1960's (1962-63). Until approximately 1969, the landfill site was again used on a periodic basis by the City of Niagara Falls for the open burning of combustible materials such as trees, brush, and leaves. The disposal site has remained inactive since that time (PASNY, 1985).

In 1981, the City of Niagara Falls proposed that the New Road Landfill site be used for the construction of a sludge disposal facility. An extensive hydrogeologic investigation was conducted of the site and an environmental impact statement was prepared. All required construction permits (Part 360) were approved and issued by the NYSDEC in 1981 (NCHD, 1982). For economic considerations, the proposed sludge disposal facility was not constructed. Presently, the City of Niagara

Falls is again considering purchase of the site for the installation of a disposal facility (Westendorf, 1985).

Over the past several years, the site has been used for scavenger dumping of waste materials including residential refuse and construction debris (i.e., brick, block, rock). There are no signs that illegal disposal of industrial/hazardous wastes have occurred on-site (ES and D&M, 1985).

SITE TOPOGRAPHY

The New Road site is located in the City of Niagara Falls, Niagara County, New York State. The ground surface is relatively flat with numerous irregular mounds of fill material and pits where materials have been excavated. The surface runoff from this area flows into perimeter ditches along the western side, and into East Gill Creek, which drains from east to west through the approximate center of the site. All surface water and runoff from the site is conducted westward via East Gill Creek beneath the access road and across the ground surface of the adjacent PASNY property, ultimately joining West Gill Creek to form Gill Creek.

The rectangular site is located in an industrial area near housing developments. To the east of the site is a Conrail train yard, east of which is the Forest Glen Subdivision, a residential area (another Phase I site). To the north of the New Road site is also a Conrail yard, north which is a scrap yard, and further north, the Town of Niagara Landfill (another Phase I site). To the west of the New Road site are the buried PASNY water aqueducts and numerous overhead power lines. South of the site is Porter Road. New Road is a gravel road and the northern extension of 48th Street. It is located along the western margin of the site and serves as an access road both to the disposal area and to the train tracks north of the site. Beneath this road is a north-south trending abandoned sewer line. Also parallel to this access road is a small abandoned water line. A building existed adjacent to the railroad tracks, east of the site until recently; only the concrete slab foundation remains.

Local Sensitive Environments

There are no NYS recognized wetlands nor critical habitats for endangered species near the site.

SITE HYDROLOGY

This summary of site hydrology is based on information from USGS Topographic Maps, NYS Museum & Science Service Bedrock Geology Map and Quaternary Map, Johnston (1964), drilling information from USGS (1982) at New Road Landfill Site, summaries by M. Hopkins of NCDOH, Bergeron (1984), and Malcolm Pirnie (1981).

Regional Geology and Hydrology

The site is located in the Erie-Ontario lowlands physiographic province. The bedrock of this region is predominantly limestone, dolostone, and shale. Most of the rocks are deep aquifers with regional flow to the south.

In the recent past, most of New York State, including the site, has been repeatedly covered by a series of continental ice sheets. The activity of the glacier widened pre-existing valleys, and deposited widespread accumulations of till. The melting of ice, ending approximately 12,000 years ago, produced large volumes of meltwater; this water subsequently shaped channels and deposited thick accumulations of stratified, granular sediments.

As glacial ice retreated from the region, meltwater formed lakes in front of the ice margin. This region is covered by lake sediments, the most recent being from Lake Iroquois (a larger predecessor to Lake Ontario) and from Lake Tonawanda (an elongate lake which occupied an east-west valley and drained north into Lake Iroquois). The sediments consist of blanket sands and beach ridges which are occasionally underlain by lacustrine silts and clays (indicating quiet or deeper water deposition).

Granular deposits in this region frequently act as shallow aquifers, whereas lacustrine clays, as well as tills, often inhibit groundwater movement. However, fine-grained, water-lain sediments, such as silts and clays, frequently contain horizontal laminations and sand seams. These internal features facilitate lateral groundwater movement through otherwise low permeability materials.

Site Hydrogeology

Bedrock beneath the site is Lockport Dolomite, occurring at depths of 12 to 15 feet. The expected elevation of this surface is between 570 to 580 feet (MSL). The slope on the rock surface may be SSW, roughly parallel to the Gill Creek drainage pattern. A nearby off-site well, estimated to be 1,500 feet north of the site, (identified by Johnson as 307-900-6 and sampled as VO1 in previous Town of Niagara Landfill studies) taps ground water in the upper part of the dolomite bedrock. This water was found to be salty. It should be noted that this well is no longer in use.

Based on previous site borings by Malcolm Pirnie (1981), soils above the top of the bedrock are expected to be generally as follows:

Unit	Depth of Range (ft.)
Fill	0 - 5
Silts and clays (lacustrine)	5 - 9
Silt, sand, and gravel (till)	9 - 12
Top of rock	Approx. 12

The silts and clays are probably lacustrine deposits from Lake Tonawanda; the underlying silt, sand, and gravel may be till. Due to the low permeability of most of these soils (10^{-7} cm/sec and less), there is not expected to be a soil aquifer on-site. However, the soil/bedrock interface may yield some quantity of ground water.

SITE CONTAMINATION

The 49 acre New Road Landfill site was used by the City of Niagara Falls for the disposal of unknown amounts of non-combustible refuse and ash residue from the incineration of municipal refuse (NCHD, 1982). No hazardous wastes are known to be disposed on-site; however, no detailed records of waste disposal practices exist for the site. Rock spoils and clean fill from the construction and excavation of power project tunnels were landfilled over the municipal refuse and incinerator ash residue. Presently, the site is used for scavenger dumping of residential refuse and construction debris (ES and D&M, 1985).

In 1981, the City of Niagara Falls conducted an hydrogeologic investigation of the New Road Landfill site. Ten ground water monitoring wells were installed around the perimeter of the landfill site. The location of the monitoring wells are presented in Figure IV-1. According to the Environmental Impact Study prepared by Malcolm Pirnie, Inc., for the proposed sludge handling facility, groundwater analysis identified elevated levels of indicator parameters including chlorides, sulfates, specific conductance and pH. It should be noted that elevated levels of indicator parameters alone does not indicate that waste disposal practices at the site are responsible for groundwater degradation. Phenol was also found in both the upgradient and downgradient wells in concentrations that exceeded NYS Water Quality Standards for Class GA Waters. The groundwater data for selected analytical parameters is presented in Table IV-1. The raw data is provided in the Appendix.

Surface water samples were also collected during the hydrogeologic study from East Gill Creek and elevated levels of chromium and phenol (above Class GA water quality standards) were detected. In addition, several indicator parameters (i.e., chlorides, sulfates, pH, and specific conductance) were found which showed water quality degradation. However, no background (upgradient) samples were collected to determine if the New Road Landfill site was the source of the contaminants. These analytical results are also presented in Table IV-1.

In July 1982, the USGS collected groundwater samples from three of the monitoring wells (Nos. 1 (5R), 2 (4R), and 3(8B)) installed during the City of Niagara Falls hydrogeologic investigation conducted in 1981. The collected samples were analyzed for heavy metals and organic compounds. Heavy metal concentrations for iron, lead and manganese exceeded the NYS Water Quality Standards for Class GA Water. However, groundwater contamination at the site was observed at both the upgradient and downgradient wells indicating possible contaminant migration from off-site sources. The groundwater sample collected from Well No. 2 (5R) also exceeded the drinking water standards for chromium. Further, barium and zinc were detected at quantifiable concentrations. The only priority pollutant found was di-n-butylphthalate which was below the quantifiable detection limit. Four non-priority organic pollutants were detected in low concentrations (USGS, 1983). The results for selected analytical parameters are presented in Table IV-2. The results of the USGS groundwater data are provided in their entirety in the Appendix.

HNU meter readings were taken during the ES and D&M site inspection, 3/26/85. No volatile organic compounds were detected in concentrations exceeding 1 ppm.

TABLE IV-1

SUMMARY OF GROUNDWATER DATA FOR

SELECTED PARAMETERS FOR THE NEW ROAD LANDFILL SITE

Parameter (mg/l)	Water Quality Standard[a]	1R Downgradient 9/80	1R Downgradient 10/80	3 Downgradient 9/80	3 Downgradient 10/80	5R Downgradient 9/80	5R Downgradient 10/80
Phenol	0.001	0.021	< 0.002	---	---	0.015	< 0.002
Chlorides	250	31	39	210	212	277	420
Chromium (Hexavalent)	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Iron	0.30	2.2	0.10	0.09	0.09	0.87	0.21
Lead	0.025	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Sulfates	250	975	730	813	740	220	221
pH	6.5-8.5	7.95	7.75	7.55	7.70	8.10	9.95
Specific Conductance	---	1,550	1,500	1,950	2,100	2,600	3,000

SOURCE: Malcolm Pirnie, 1981

[a] NYS Water Quality Standards for Class GA Waters (Groundwater).

TABLE IV-1 (Continued)

SUMMARY OF GROUNDWATER DATA FOR

SELECTED PARAMETERS FOR THE NEW ROAD LANDFILL SITE

Parameter (mg/l)	Water Quality Standard[a]	6R/8B Upgradient 6R-9/80	6R/8B Upgradient 8-B10/80	10R Upgradient 9/80	10R Upgradient 10/80	Creek 9/80	Creek 10/80
Phenol	0.001	0.011	0.078	---	< 0.002	0.036	< 0.002
Chlorides	250	46	40	47	101	142	161
Chromium (Hexavalent)	0.05	0.035	< 0.03	< 0.02	< 0.02	0.055	0.070
Iron	0.30	0.17	0.08	0.79	0.07	0.07	0.04
Lead	0.025	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Sulfates	250	1,590	217	242	382	379	346
pH	6.5-8.5	11.10	7.25	8.35	7.45	7.80	9.10
Specific Conductance	---	5,000	650	900	1,150	1,250	1,100

SOURCE: Malcolm Pirnie, 1981

[a] NYS Water Quality Standards for Class GA Waters (Groundwater).

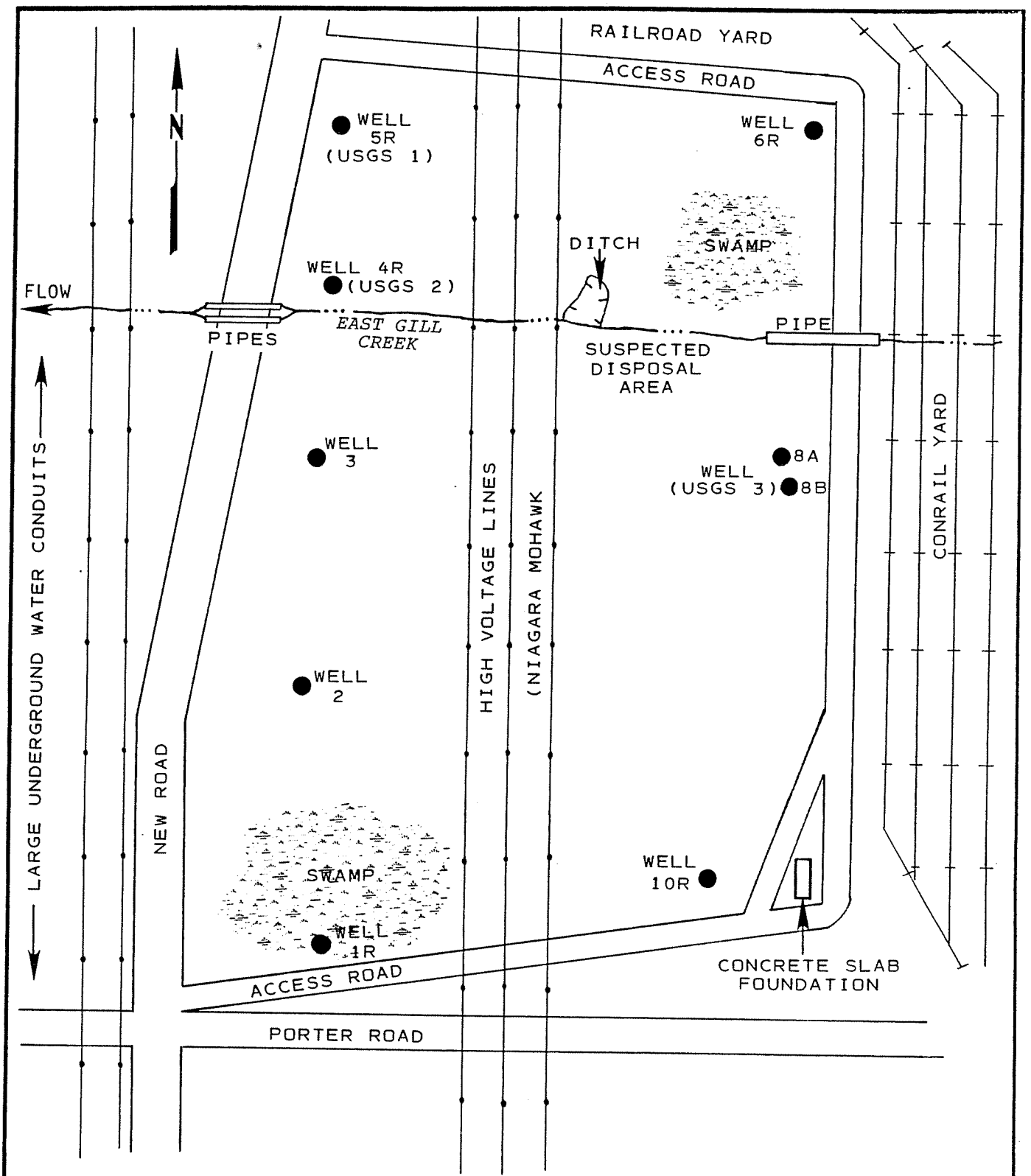
TABLE IV-2

SELECTED GROUNDWATER MONITORING RESULTS FROM THE NEW ROAD LANDFILL

Parameter (mg/l)	~~4B~~ 5R Sample 1	~~5R~~ 4R Sample 2	8B Sample 3	Water Quality Standard[a]
Iron	11.0	41.9	13.0	0.3
Lead	0.071	0.066	0.128	0.025
Manganese	4.94	1.64	4.22	0.30
Zinc	0.269	0.209	0.316	5.0
Barium	0.974	0.382	0.454	1.0
Chromium (Hexavalent)	0.023	0.058	0.034	0.05
Di-n-butylphthalate	---	[b]	---	---

SOURCE: Niagara River Toxics Study (Draft), USGS, 1983 (see appendix for details).

[a] NYS Water Quality Standards for Class GA Waters.
[b] Constituent detected at less than quantifiable limit.



NOT TO SCALE

* NOTE:

Well designations based on Malcolm Pirnie, 1980. R indicates a rock boring finished as a well.

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PLOT PLAN
NEW ROAD

FIGURE IV-1

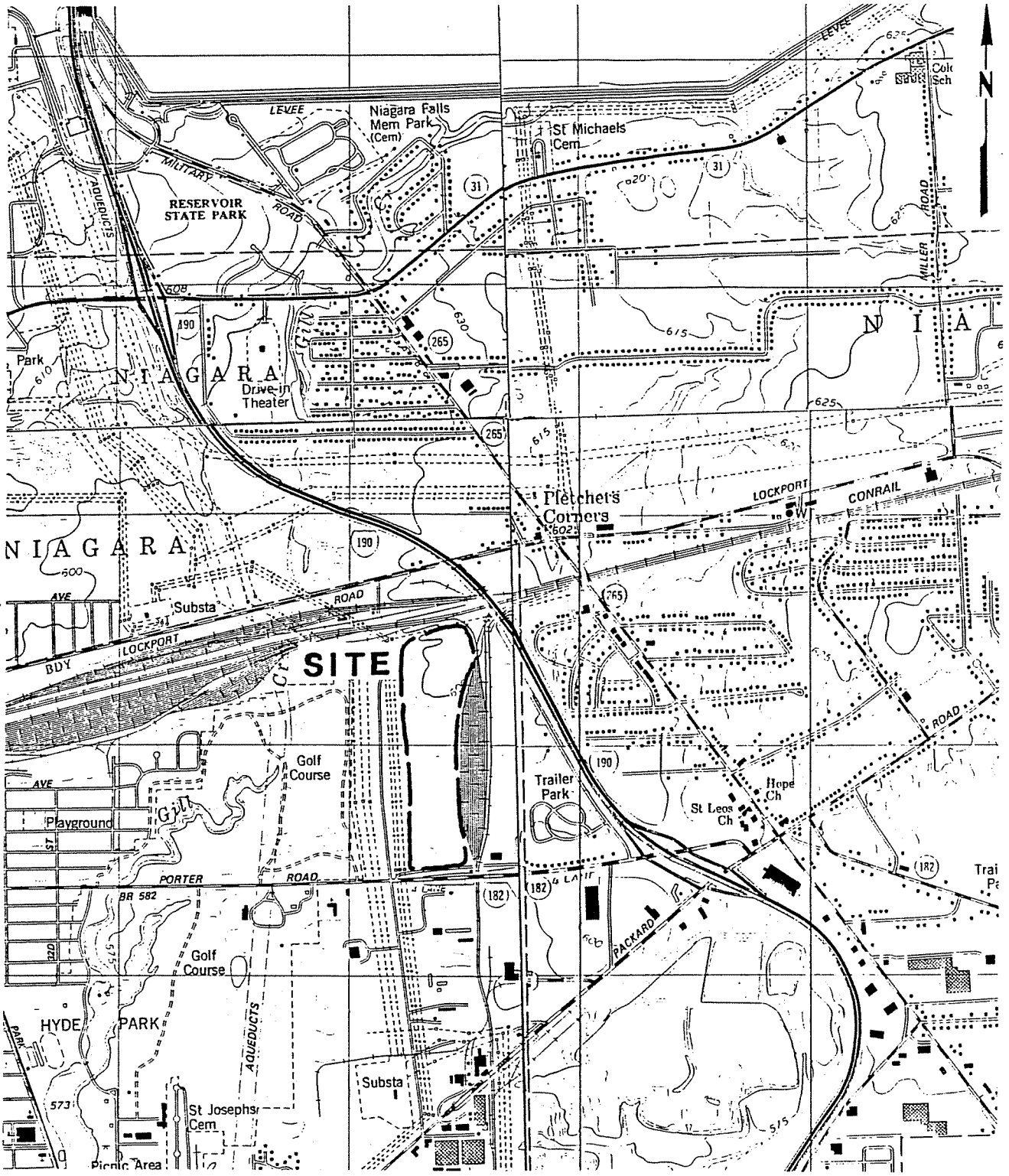
NARRATIVE SUMMARY

The 49 acre New Road site located in the City of Niagara Falls, New York. In the 1950's, the City of Niagara Falls operated the site as an open dump for non-combustible refuse and incinerator ash from municipal waste (NCHD, 1982). In 1954-55, a fish kill occurred in Gill Creek, adjacent to the landfill site, which was attributed to leachate generated at the landfill (NYSDEC Interagency Task Force). From 1958 until 1962-63, The NYS Power Authority operated the site for the disposal of rock spoils. With the exception of scavenger dumping and the burning of combustible materials, the landfill site has remained inactive since approximately 1970 (PASNY, 1985).

In 1981, the City of Niagara Falls proposed using the New Road Landfill site for the construction of a sludge handling facility. A hydrogeologic study of the site detected heavy metals and elevated levels of chlorides, sulfates, specific conductance, pH and phenols (Malcom Pirnie, 1981). Groundwater quality at the site appears to be degraded based on the Malcom Pirnie analytical data. In 1981, the USGS collected groundwater samples from three monitoring wells at the New Road Landfill site. Heavy metals, (i.e., iron, lead, manganese and chromium) were detected in concentrations exceeding the NYS Water Quality Standards for Class GA Waters. One priority and several non-priority organic contaminants were also detected (USGS, 1983). During the USGS sampling effort, true upgradient well was not sampled, and therefore, the contamination identified from this monitoring can not be attributed to the site.

HNu meter readings taken during the site inspection conducted by ES and D&M (3/26/85), did not detect volatile organics in concentrations in excess of 1 ppm. The population within a one mile radius of the site is approximately 3,900 people. There are no NYS recognized wetlands nor critical habitats for endangered species near the site. Further, no known environmental or health threat is known to exist at the site. No environmental cleanup action or enforcement actions have been taken as a result of past disposal practices.

LOCATION



LATITUDE: 43°06'39"
LONGITUDE: 79°00'15"

SCALE

0 1000 2000 3000 4000 FEET

REFERENCE: U.S.G.S. 7.5' Topographic Map
Niagara Falls, NY-ONT. (1980), Lewiston, NY-ONT. (1980), Tonawanda West, NY (1980) and Ransomville, NY (1980) Quadrangles

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SITE LOCATION MAP

NEW ROAD

FIGURE ii-1

HRS COVER SHEET

Facility Name: New Road Landfill

Location: New Road north of Porter Road, Niagara Falls, NY

EPA Region: II

Person(s) in charge of the facility: PASNY

Name of Reviewer: S. Robert Steele, II Date: 4/25/85

General Description of the facility:

The New Road Landfill site was used during the 1950's by the City of Niagara Falls for the disposal of non-combustible material and incinerator ash. The NYS Power Authority purchased the site in 1958 and used the site for the disposal of rock spoils from power project tunnels. Analysis of groundwater collected from the on-site monitoring wells identified heavy metals (i.e., iron, lead, manganese, and chromium) above NYS Water Quality Standards For Class GA Waters and elevated levels for chlorides, sulfide, specific conductance, pH, and phenols were found. One priority and several non-priority organic compounds were also detected in low concentrations in the groundwater samples collected.

Scores: $S_M = 7.03$ ($S_{gw} = 10.94$ $S_{sw} = 5.31$ $S_a = 0$)

$S_{FE} = 0$

$S_{DC} = 0$

Facility Name: New Road Landfill Date: 5/23/85

Surface Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
[1] Observed Release	(0) 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line [4]. If observed release is given a value of 0, proceed to line [2]. ✓					
[2] Route Characteristics					4.2
Facility Slope and Intervening Terrain	(0) 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3	
Distance to Nearest Surface Water	0 1 2 (3)	2	4	6	
Physical State	0 1 (2) 3	1	2	3	
Total Route Characteristics Score			10	15	
[3] Containment	0 1 2 (3)	1	3	3	4.3
[4] Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 [1] 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics Score			19	26	
[5] Targets					4.5
Surface Water Use	0 1 (2) 3	3	6	9	
Distance to a Sensitive Environment	(0) 1 2 3	2	0	6	
Population Served/ Distance to Water Intake Downstream	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			6	55	
[6] If line [1] is 45, multiply [1] x [4] x [5]. If line [1] is 0, multiply [2] x [3] x [4] x [5]			3420	64,350	
[7] Divide line [6] by 64,350 and multiply by 100			S_{sw} = 5.31		

SURFACE WATER ROUTE WORK SHEET

Facility Name: New Road Landfill Date: 5/23/85

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
[1] Observed Release	(0) 45	1	0	45	3.1
If observed release is given a score of 45, proceed to line [4]. If observed release is given a score of 0, proceed to line [2]. ✓					
[2] Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 (3)	2	6	6	
Net Precipitation	0 1 (2) 3	1	2	3	
Permeability of the Unsaturated Zone	(0) 1 2 3	1	0	3	
Physical State	0 1 (2) 3	1	2	3	
Total Route Characteristics Score			10	15	
[3] Containment	0 1 2 (3)	1	3	3	3.3
[4] Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 [1] 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics Score			19	26	
[5] Targets					3.5
Ground Water Use	0 (1) 2 3	3	3	9	
Distance to Nearest Well/Population Served	0 4 6 (8) 10 12 16 18 20 24 30 32 35 40	1	8	40	
Total Targets Score			11	49	
[6] If line [1] is 45, multiply [1] x [4] x [5]. If line [1] is 0, multiply [2] x [3] x [4] x [5]			6270	57,330	
[7] Divide line [6] by 57,330 and multiply by 100			S_{gw} = 10.94		

GROUND WATER ROUTE WORK SHEET

Facility Name: New Road Landfill Date: 5/23/85

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
[1] Observed Release	(0) 45	1	0	45	5.1
Date and Location: 3/26/85 upwind & downwind at New Road Landfill					
Sampling Protocol: HNU meter readings					
If line [1] is 0, the S_a = 0. Enter on line [5]. If line [1] is 45, then proceed to line [2].					
[2] Waste Characteristics					5.2
Reactivity and Incompatibility	(0) 1 2 3	1	0	3	
Toxicity	(0) 1 2 3	3	0	9	
Hazardous Waste	(0) 1 2 3 4 5 6 7 8	1	0	8	
	Total Waste Characteristics Score		0	20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 (21) 24 27 30	1	21	30	
Distance to Sensitive Environment	(0) 1 2 3	2	0	6	
Land Use	0 1 2 (3)	1	3	3	
	Total Targets Score		24	39	
[4] Multiply [1] x [2] x [3]			0	35,100	
[5] Divide line [4] by 35,100 and multiply by 100			S_a = 0		

AIR ROUTE WORK SHEET

Facility Name: New Rd Landfill Date: 5/23/85

Worksheet for Computing S_M

	S	S^2
Groundwater Route Score (S_{gw})	10.94	119.68
Surface Water Route Score (S_{sw})	5.31	28.20
Air Route Score (S_a)	0.00	0.00
$S_{gw}^2 + S_{sw}^2 + S_a^2$		147.88
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		12.16
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		7.03

WORK SHEET FOR COMPUTING S_M

Facility Name: New Road Landfill Date: 5/23/85

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100			S_{FE} = 0		

FIRE AND EXPLOSION WORK SHEET

Facility Name: New Road Landfill Date: 5/23/85

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	(0) 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2 ✓					
2 Accessibility	0 1 2 (3)	1	3	3	8.2
3 Containment	0 (15)	1	15		8.3
4 Waste Characteristics Toxicity	(0) 1 2 3	5	0	15	8.4
5 Targets					8.5
Population Within 1-Mile Radius	0 1 2 3 (4) 5	4	16	20	
Distance to a Critical Habitat	(0) 1 2 3	4	0	12	
Total Targets Score			16	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	21,600	
7 Divide line 6 by 21,600 and multiply by 100			S_{DC} = 0		

DIRECT CONTACT WORK SHEET

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

FACILITY NAME: New Road Landfill

LOCATION: New Rd., north of Porter Rd., Niagara Falls, NY

GROUNDWATER ROUTE

1. OBSERVED RELEASE

Contaminants detected (5 maximum):

Heavy metals (i.e., iron, lead, manganese, and chromium), 2-(2-butoxyethoxy)-ethanol, 2,4,6-trimethyl-1,3,5-trioxane, 2-ethyl-1-hexanol and copper (Chemical analyses by Mead Compuchem - 7/82).

Rationale for attributing the contaminants to the facility:

Groundwater samples taken from on-site monitoring wells. However, due to highest levels of chromium in upper gradient well, these contaminants are not attributable to the site (USGS, 1982, and Malcolm Pirnie, 1981).

* * *

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifer(s) in concern:

Bedrock aquifer in Lockport Dolomite.

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

12 to 15 feet (Malcolm Pirnie, 1981).

Depth from the ground surface to the lowest point of waste disposal/ storage:

Unknown (not likely to be greater than top of bedrock - 10 feet).

Net Precipitation

(U.S. Dept. of Commerce, National Climatic Center, Climatic Atlas of the United States, 1979).

Mean annual or seasonal precipitation (list months for seasonal):

Mean annual precipitation is 36".

Mean annual lake or seasonal evaporation (list months for seasonal):

Mean annual lake evaporation is 27".

Net precipitation (subtract the above figures):

9" (36" - 27" = 9").

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Fill overlying clay (NYSDEC Registry Sheet, 12/83).

Permeability associated with soil type

Less than 10^{-7} cm/sec (Freeze, R.A., and J.A. Cherry, Groundwater, 1979).

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Solid (NYSDEC Registry Sheet, 12/83).

3. CONTAINMENT

(Niagara County Health Department, Site Profile Report, 1982)

Containment

Method(s) of waste or leachate containment evaluated:

Unlined, open dump.

Method with highest score:

Unlined, open dump.

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Heavy metals (detected in groundwater samples) and di-n-butylphthalate (Niagara River Toxics Draft Report, USGS, 1983 and Malcolm Pirnie Hydrogeologic Study, 1981). For scoring purposes, these contaminants are attributed to the site although further studies are necessary for verification.

Compound with highest score:

Heavy metals (toxicity = 3, persistence = 3) - 18.

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Unknown (NYSDEC Registry Sheet, 12/83).

Basis of estimating and/or computing waste quantity:

Records of the quantity of municipal refuse and PASNY wastes were not kept for the New Road Landfill site. No hazardous wastes are known to have been disposed on-site.

5. TARGETS

Groundwater Use

Uses(s) of aquifer(s) of concern within a 3-mile radius of the facility:

An industrial well located at Olin Chemical Corp. on Buffalo Avenue 2.75 miles southwest of site. (Hopkins, 10/85).

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

On Buffalo Avenue southwest of site.

Distance to above well or building:

2.75 miles.

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

Olin Chemical Corp. draws cooling water from quifer (Hopkins, 10/85).

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

No irrigation wells within 3 miles of site (ES and D&M Site Inspection, 3/26/85).

Total population served by ground water within a 3-mile radius:

Olin Chemical Corp. employs approximately 200 people; however, few are exposed to aquifer cooling water and drinking water is from a municipal source (Hopkins, 10/85).

SURFACE WATER ROUTE

1. OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

Phenol, chlorides, chromium, iron, and sulfates (Malcolm Pirnie, 1981).

Rationale for attributing the contaminants to the facility:

Not attributed to site due to unknown samling location and lack of accompanying upgradient (or downgradient) sample.

2. ROUTE CHARACTERISTICS

(USGS Topographic Maps: Niagara Falls, NY-ONT-1965 and Tonawanda West, NY-1965 Quadrangles)

Facility Slope and Intervening Terrain

Average slope of facility in percent:

0.3%.

Name/description of nearest downslope surface water:

East Gill Creek.

Average slope of terrain between facility and above-cited surface water body in percent:

0.4%.

Is the facility located either totally or partially in surface water?

No.

Is the facility completely surrounded by areas of higher elevation?

No.

1-Year 24-Hour Rainfall in Inches

2.1" (U.S. Department of Commerce Technical Paper No. 40).

Distance to Nearest Downslope Surface Water

On-site stream, less than 1,000 feet (ES/D&M site inspection, 1985).

Physical State of Waste

Solid (NYSDEC Registry Sheet, 12/83).

3. CONTAINMENT

Containment

(Niagara County Health Department, Site Profile Report, 1982)

Method(s) of waste or leachate containment evaluated:

Landfill not covered, with no diversion system.

Method with highest score:

Landfill not covered, with no diversion system.

Note: Placement of rock spoil from PASNY projects is not considered a sound cover system.

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Heavy metals (detected in groundwater samples) and Di-n-butylphthalate (Niagara River Toxics Study (DRAFT), USGS, 1982).

Compound with highest score:

Heavy metals (toxicity = 3, persistence = 3) - 18.

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Unknown (NYSDEC Registry Sheet, 12/83).

Basis of estimating and/or computing waste quantity:

Records of the quantity of municipal refuse and PASNY wastes were not kept for the New Road Landfill site. No hazardous wastes are known to have been disposed on-site.

* * *

5. TARGETS

(USGS Topographic Maps: Niagara Falls NY-ONT, 1980 and Tonawanda West, NY-1980)

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Recreational, Gill Creek is adjacent to 2 golf courses, Hyde Park, and Gill Creek Park. (USGS Topographic Map: Niagara Falls, NY-ONT.)

Is there tidal influence?

No.

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

None within 2 miles (western NYS not a coastal area).

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

None within 1 mile (NYS Wetlands Maps).

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

None within 1 mile (NYSDEC Region 9, Division of Fish & Wildlife Files).

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

None within specified distances (NYS Atlas of Community Water System Sources, 1982).

Computation of land area by above-cited intake(s) and conversion to population (1.5 people per acre):

Not Applicable.

Total population served:

Not Applicable.

Name/description of nearest of above water bodies:

Not Applicable.

Distance to above-cited intakes, measured in stream miles:

Not Applicable.

AIR ROUTE

1. OBSERVED RELEASE

Contaminants detected:

None, HNu meter readings were taken and all readings were less than 1 ppm, indicating no air releases. Upgradient and downgradient samples were taken during site inspection.

Date and location of detection of contaminants:

ES and D&M Site Inspection, 3/26/85.

Methods used to detect the contaminants:

HNu meter.

Rationale for attributing the contaminants to the site:

Not Applicable.

* * *

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

No known reactive compounds are disposed of on-site.

Most incompatible pair of compounds:

No known incompatible compounds are disposed of on-site.

Toxicity

Most toxic compound:

Although organics have been detected in the groundwater, HNU meter readings did not detect any constituents that were entering the air pathway.

Hazardous Waste Quantity

Total quantity of hazardous waste:

No hazardous wastes are known to be disposed on-site which could impact the air pathway (NYSDEC Registry, 1983).

Basis of estimating and/or computing waste quantity:

No hazardous wastes are known to be disposed on-site; therefore, HRS score is zero.

* * *

3. TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

(0 to 4 mi) 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

85,787 people (Compiled from 1980 US Bureau of the Census Data).

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

None within 2 miles (western NYS not a coastal area).

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

None within 1 mile (NYS Wetlands Maps).

Distance to critical habitat of an endangered species, if 1 mile or less:

None within 1 mile (NYSDEC Region 9, Division of Fish & Wildlife Files).

Land Use

Distance to commerical/industrial area, if 1 mile or less:

0.5 miles (ES and D&M Site Visit, 3/26/85).

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

More than 2 miles (USGS Topographic Map: Niagara Falls, NY-ONT, 1980 and Tonawanda West, NY-1980).

Distance to residential area, if 2 miles or less:

0.17 mile (USGS Topographic Map: Niagara Falls, NY-ONT, 1980 and Tonawanda West, NY-1980).

Distance to agricultural land in production within past 5 years, if 1 mile or less:

More than 1 mile (USGS Topographic Map: Niagara Falls, NY-ONT, 1980 and Tonawanda West, NY-1980).

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

More than 2 miles (USGS Topographic Map: Niagara Falls, NY-ONT, 1980 and Tonawanda West, NY-1980).

Is a historic or landmark site (National Register of Historic Places and National Natural Landmarks) within view of the site?

No.

FIRE AND EXPLOSION

1. CONTAINMENT

Hazardous substances present:

No records were found during the Phase I investigation which indicate that a past or present fire and explosion hazard exists at the site.

Type of containment, if applicable:

* * *

2. WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

No measurements were taken to determine the potential for a fire or explosion on-site.

Ignitability

Compound used:

No ignitable compounds are known to exist on-site.

Reactivity

Most reactive compound:

No reactive compounds are known to exist on-site.

Incompatibility

Most incompatible pair of compounds:

No incompatible compounds are known to exist on-site.

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

No hazardous waste with the potential to create a fire and explosion hazard are known to exist on-site.

Basis of estimating and/or computing waste quantity:

Not applicable, see above comment.

* * *

3. TARGETS

Distance to Nearest Population

Residential area located 0.17 mile from the site (ES and D&M Site Visit, 3/26/85).

Distance to Nearest Building

0.17 mile to residential houses at the Forest Glen Subdivision (ES and D&M Site Visit, 3/26/85).

Distance to Sensitive Environment

Distance to wetlands:

None within 1 mile (NYS Wetlands Maps).

Distance to critical habitat:

None within 1 mile (NYSDEC, Region 9, Division of Fish and Wildlife Files).

Land Use

Distance to commercial/industrial area, if 1 mile or less:

0.5 mile (ES and D&M Site Visit, 3/26/85).

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

More than 2 miles (USGS Topographic Map: Niagara Falls, NY-ONT, 1980 and Tonawanda West, NY-1980).

Distance to residential area, if 2 miles or less:

0.17 mile to Forest Glen Subdivision (ES and D&M Site Visit, 3/26/85).

Distance to agricultural and in production within past 5 years, if 1 mile or less:

More than 1 mile (USGS Topographic Map: Niagara Falls, NY-ONT, 1980 and Tonawanda West, NY-1980).

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

More than 2 miles (USGS Topographic Map: Niagara Falls, NY-ONT, 1980 and Tonawanda West, NY-1980).

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

No.

Population with 2-Mile Radius

20,879 people (US Census Data, 1980).

Buildings Within 2-Mile Radius

5,490 estimated buildings (USGS Topographic Map: Niagara Falls, NY-ONT, 1980 and Tonawanda West, NY-1980).

DIRECT CONTACT

1. OBSERVED INCIDENT

Date, location, and pertinent details of incident:

During the conduct of the Phase I investigation, information was not found which indicated that an incident related to direct contact occurred at this site.

* * *

2. ACCESSIBILITY

Describe type of barrier(s):

Barriers do not surround the facility = 3 (ES and D&M Site Inspection).

* * *

3. CONTAINMENT

Type of containment, if applicable:

The landfill site has not been covered with an adequate cover system. Note that no hazardous wastes are known to exist on-site. Rock spoil from PASNY construction project is the primary material on-site.

* * *

4. WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

No compounds exist on-site which have the potential for direct contact. Contaminants detected in groundwater does not pose direct contact problem.

Compound with highest score:

Not applicable. No known wastes on-site pose a direct contact threat.

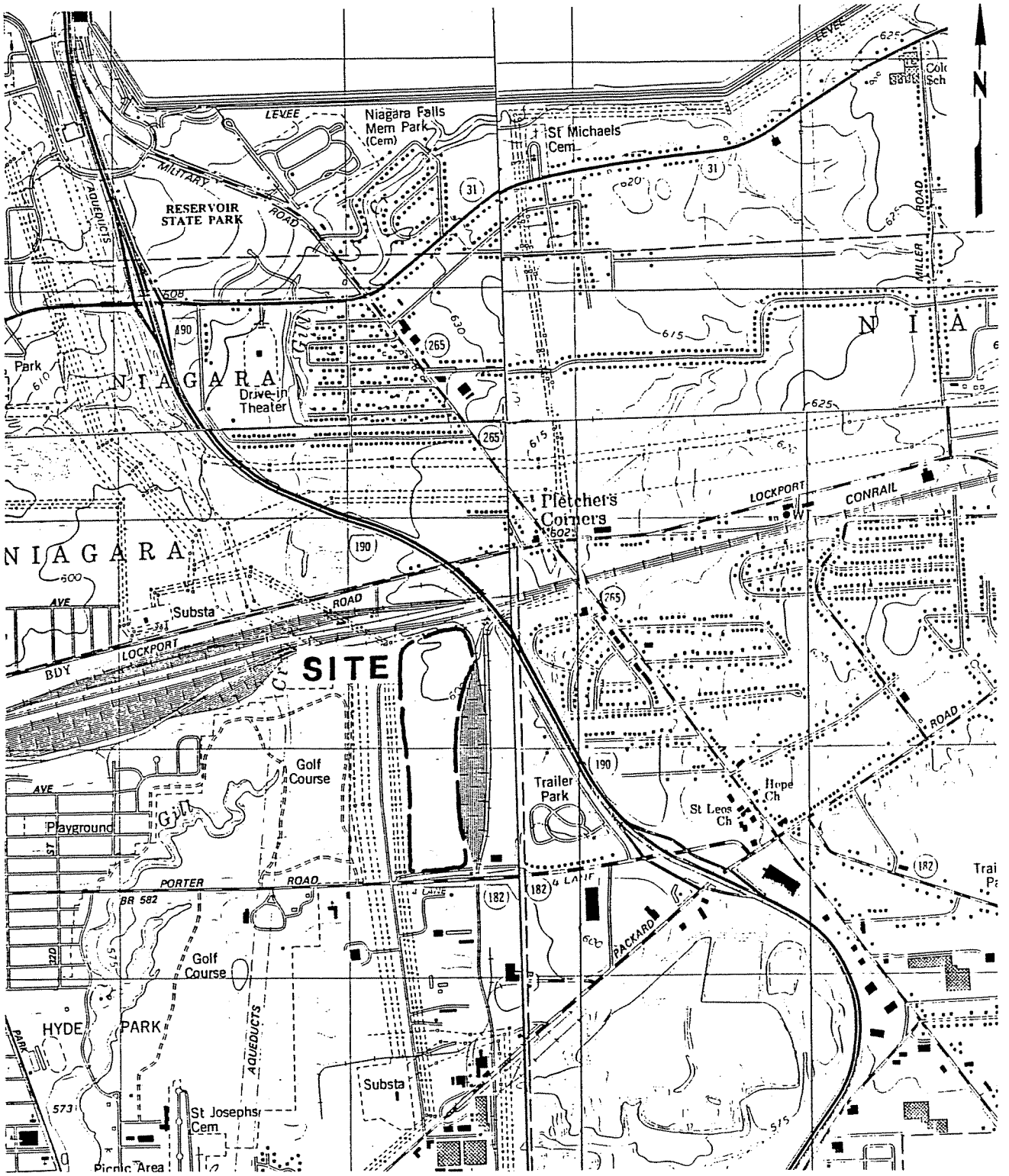
5. TARGETS

Population within one-mile radius

3,854 (US Census Data, 1980).

Distance to critical habitat (of endangered species)

None within one mile (NYSDEC, Region 9).



LATITUDE: 43°06'39"
LONGITUDE: 79°00'15"

SCALE

0 1000 2000 3000 4000 FEET

ENGINEERING-SCIENCE, INC.
IN ASSOCIATION WITH
DAMES & MOORE

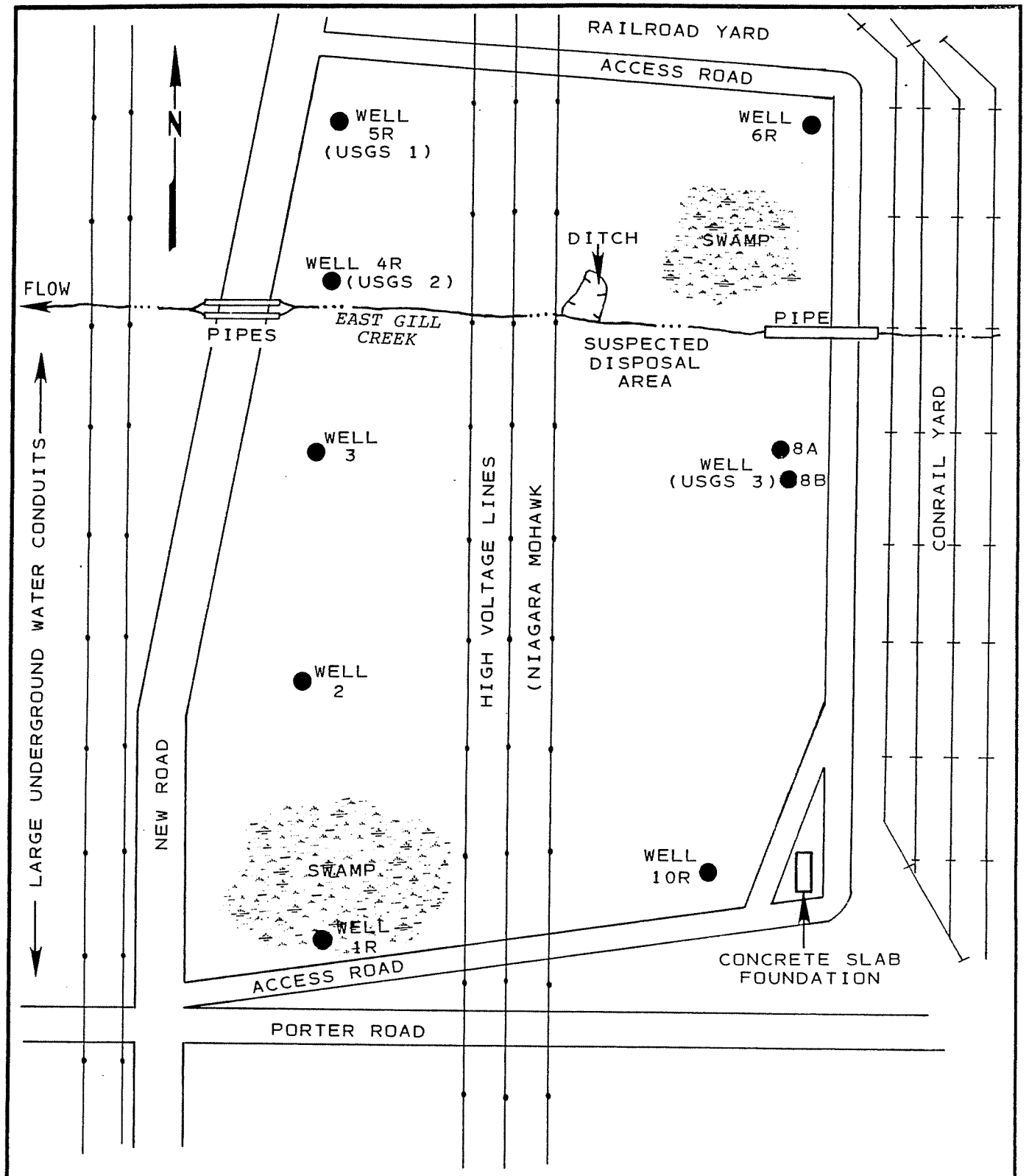
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
PHASE I REPORT

SITE LOCATION MAP

NEW ROAD

FIGURE iv-1

REFERENCE: U.S.G.S. 7.5' Topographic Map
Niagara Falls, NY-ONT. (1980), Lewiston,
NY-ONT. (1980), Tonawanda West, NY (1980)
and Ransomville, NY (1980) Quadrangles



NOT TO SCALE

ENGINEERING-SCIENCE, INC.
IN ASSOCIATION WITH
DAMES & MOORE

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
PHASE I REPORT

PLOT PLAN
NEW ROAD

FIGURE iv-2

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980507149

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
NEW ROAD LANDFILL	New Road North of Porter Road

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
NIAGARA FALLS	NY	14305	Niagara	063	36

09 COORDINATES LATITUDE	LONGITUDE
43° 06' 39"	78° 00' 15"

10 DIRECTIONS TO SITE (Starting from nearest public road)

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)
POWER Authority of NYS	5777 Lewiston Road

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Lewiston	NY	14092	(716) 285-3211

07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)
Site Inactive (SAME)	

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
			( )

13 TYPE OF OWNERSHIP (Check one)
☐ A. PRIVATE ☐ B. FEDERAL: PASNY (Agency name) ☒ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☐ A. RCRA 3001 DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☐ YES ☐ NO DATE 3/26/85 (MONTH DAY YEAR)

BY (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)	03 YEARS OF OPERATION	
☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN	1950's (BEGINNING YEAR)	1962 (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
The landfill was used (1950's) by the city of Niagara Falls to dispose non-combustible refuse and ash from the city's refuse incinerator from 1958 - 1962, rock spoils and clean fill were disposed on-site

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
S. Robert STEELE, II	Engineering - Science	(703) 591-7575

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
S. Robert STEELE, II		Same	( )	3/26/85 (MONTH DAY YEAR)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	098050749

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER UNKnown (Specify)
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS UNKnown
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☐ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

UNKnown

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			waste materials dumped
OLW	OILY WASTE			on-site incl. de refuse
SOL	SOLVENTS			incinerator ash, non-combustible
PSD	PESTICIDES			fill materials and mine spoils
OCC	OTHER ORGANIC CHEMICALS			Scavenger dumping activities
IOC	INORGANIC CHEMICALS			from construction material
ACD	ACIDS			of 55 gallon old drums
BAS	BASES			general construction debris
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	NO Hazardous WASTES Are		known to have		
	been disposed	on-site			

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Site inspection conducted by ES and O&M Staff
Niagara County Health Department Site Profile Report, 1982

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	0980507149

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
02 ☒ OBSERVED (DATE: 1982) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

USGS sampled on site monitoring wells

01 ☒ B. SURFACE WATER CONTAMINATION
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

unknown - creek flow through site

01 ☐ C. CONTAMINATION OF AIR
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

No

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

unknown

01 ☐ E. DIRECT CONTACT
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

unknown

01 ☐ F. CONTAMINATION OF SOIL
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ (Acres)
04 NARRATIVE DESCRIPTION

unknown

01 ☐ G. DRINKING WATER CONTAMINATION
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

No

01 ☐ H. WORKER EXPOSURE/INJURY
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

No

01 ☐ I. POPULATION EXPOSURE/INJURY
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

No

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 096D7149

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

unknown

01 ☐ K. DAMAGE TO FAUNA
04 NARRATIVE DESCRIPTION (Include name(s) of species)
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

UNKNOWN

01 ☐ L. CONTAMINATION OF FOOD CHAIN
04 NARRATIVE DESCRIPTION
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

UNKNOWN

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums)
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

unlined open dump

01 ☐ N. DAMAGE TO OFFSITE PROPERTY
04 NARRATIVE DESCRIPTION
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

No

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
04 NARRATIVE DESCRIPTION
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

No

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING
04 NARRATIVE DESCRIPTION
02 ☒ OBSERVED (DATE: 1985) ☐ POTENTIAL ☐ ALLEGED

Insecure area - recent dumping & trash visible during site visit

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis, reports)

ES and DEM Site Inspection, 3/26/85

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	098050714 9

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
NEW ROAD Landfill	NEW ROAD North of Porter Road

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Niagara Falls	NY	14305	Niagara	063	36

09 COORDINATES	10 TYPE OF OWNERSHIP (Check one)
LATITUDE 43 06 35.__ / LONGITUDE 79 00 15.__	☒ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER Power Authority of NY ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
3 26 85 (MONTH DAY YEAR)	☐ ACTIVE ☒ INACTIVE	1950's / 1962 (BEGINNING YEAR / ENDING YEAR) ☐ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)

☐ E. STATE ☒ F. STATE CONTRACTOR Dames & Moore (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
S. Robert STEELE II	Environmental Scientist	ES	(703) [illegible]
09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Eileen Gilligan	Geologist	DEC	(3[illegible]
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Mike Hopkins	Niagara Co.	HEALTH Department	(716) 284-3124
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	9 20 AM	Cool, Sunny

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
S. Robert STEELE, II	Engineering Science (ES)	(703) 57[illegible]

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
S. Robert STEELE, II		ES	Same	3 20 85 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	980507149

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER UNKnown *(Specify)*
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS UNKnown
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS *(Check all that apply)*

- ☐ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

UNKnown

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			WASTE materials disposed
OLW	OILY WASTE			on-site include refuse
SOL	SOLVENTS			INCINERATOR ash non-combustible
PSD	PESTICIDES			fill material and rock
OCC	OTHER ORGANIC CHEMICALS			Scavenger Business materials
IOC	INORGANIC CHEMICALS			tires, construction material
ACD	ACIDS			solvents, explosives, old drums
BAS	BASES			general construction items
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES *(See Appendix for most frequently cited CAS Numbers)*

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	NO Hazardous WASTES are known to have				
	been disposed on-site				

V. FEEDSTOCKS *(See Appendix for CAS Numbers)*

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

Site inspection conducted by ES and D&M, 3/24/85
Niagara County Health Department Site Profile Report, 1982

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	0980507149

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION — 02 ☒ OBSERVED (DATE: 1982) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

USGS sampled on site monitoring wells

01 ☒ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

unknown - creek flows through site

01 ☐ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

No

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

unknown

01 ☐ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

unknown

01 ☐ F. CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ (Acres) 04 NARRATIVE DESCRIPTION

unknown

01 ☐ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

No

01 ☐ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

No

01 ☐ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

No

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	098050749

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

unknown

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION *(Include name(s) of species)*

UNKNOWN

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES *(Spills/Runoff/Standing liquids, Leaking drums)* — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

unlined open dumps

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☒ OBSERVED (DATE: 1985) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Insecure area - recent dumping & trash visible during site visit

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

V. SOURCES OF INFORMATION *(Cite specific references, e. g., state files, sample analysis, reports)*

ES and DEM site inspection, 3/26/85

EPA FORM 2070-13 (7-81)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980507149

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☑ F. LANDFILL		
☐ G. LANDFARM		
☑ H. OPEN DUMP	Unknown	
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER ______ (Specify)

05 OTHER

- ☐ A. BUILDINGS ON SITE

06 AREA OF SITE

49 (Acres)

07 COMMENTS

The landfill was used during the 1950's by the city of [illegible] Falls to dispose non-combustible materials and ash from the city's refuse incinerator. From 1958 to 1962, the site received rock [illegible] from sewer project excavation. Scavenger dump has received recent [illegible]

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☑ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Waste containment methods used during the 1950's is unknown. Rock spoils and fill material were placed directly over incinerator residues and non-combustible materials. Presently, scavenger wastes are disposed directly on the ground.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☑ YES ☐ NO

02 COMMENTS

The inactive site has no fencing to prevent unauthorized entry.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Site inspection conducted by ES and DEC, 3/26/84

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

EPA

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 0980507149

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)	SURFACE	WELL	02 STATUS ENDANGERED	AFFECTED	MONITORED	03 DISTANCE TO SITE
COMMUNITY	~~A.☒~~	B. ☐	A. ☐	B. ☐	C. ☐	A. >3 (mi)
NON-COMMUNITY	C. ☐	D. ☐	D. ☐	E. ☐	F. ☐	B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ~~☐~~☒ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 1000 ~~0~~

03 DISTANCE TO NEAREST DRINKING WATER WELL N/A (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
~10' (ft)	unknown	~40' (ft)	unknown (gpd)	☐ YES ☐ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)
monitoring wells on site
several industrial wells 2 miles south of site

10 RECHARGE AREA		11 DISCHARGE AREA	
☐ YES ☐ NO	COMMENTS: unknown	☐ YES ☐ NO	COMMENTS:

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

~~☒~~☐ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
E Gill Creek	☐	0.25 (mi)
Gill Creek	☐	1.3 (mi)
Niagara River	☐	_____ (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 3854 NO. OF PERSONS	B. ~~20,879~~ NO. OF PERSONS	C. ~~61,894~~ NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION: 0.17 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
5,490	0.17 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)
A trailer park is 0.17 miles east of site, beyond which is suburban housing

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 0980507149

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☒ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one) LOCKPORT DOLOMITE

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☒ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
~12 (ft)	unknown (ft)	→

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
9 (in)	2.1 (in)	0.3 %	SW	0.3 %

09 FLOOD POTENTIAL
SITE IS IN >500 YEAR FLOODPLAIN

10
☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. >2 (mi)	B. >1 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)
MIGRATORY BIRDS >1 (mi)
ENDANGERED SPECIES: HALIAEETUS LEUCOCEPH, AQUILA CHRYSAETOS, FALCO PEREGRENES

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. 0.5 (mi)	B. 0.17 (mi)	C. 2 (mi)	D. >1 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site & surrounding area are flat, drained by East Hill Creek.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

USGS topographic MAPS
ES and OEM site inspection, 3/26/85
Niagara County Health Department, Site Profile Report, 1982

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980507149

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
HNU	HNU meter readings were taken during the
	site inspection and no measurements exceeded
	1 ppm

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF Engineering Science
(Name of organization or individual)

03 MAPS ☐ YES ☐ NO

04 LOCATION OF MAPS

V. OTHER FIELD DATA COLLECTED *(Provide narrative description)*

None

VI. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

Site inspection conducted by ES and O&M, 3/26/85

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	0980507149

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Power Authority OF NYS						

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
City of Niagara Falls						

IV. REALTY OWNER(S) (If applicable: list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Niagara County Health Department, Preliminary Investigation and Profile Reports, March 1982

PASNY, 1985

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980507149

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
Site inactive	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

ES and O&M Site inspection, 3/26/85

PASNY, 1985

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	0 9 8 5 0 7 1 4 9

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

NO hazardous wastes are generated or disposed at the landfill site. Site has been inactive since approximately 1970

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

PASNY, 1985

ES and DB on site inspection, 3/26/85

Niagara County Health Department, Site Public Report, 1982

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 0980507149

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ C. PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ D. SPILLED MATERIAL REMOVED 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ F. WASTE REPACKAGED 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ H. ON SITE BURIAL 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ I. IN SITU CHEMICAL TREATMENT 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ L. ENCAPSULATION 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ N. CUTOFF WALLS 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ P. CUTOFF TRENCHES/SUMP 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION: NO	02 DATE	03 AGENCY

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	0980507149

II PAST RESPONSE ACTIVITIES *(Continued)*

01 ☐ R. BARRIER WALLS CONSTRUCTED 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ S. CAPPING/COVERING 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ T. BULK TANKAGE REPAIRED 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ U. GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ V. BOTTOM SEALED 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ W. GAS CONTROL 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ X. FIRE CONTROL 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ Y. LEACHATE TREATMENT 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ Z. AREA EVACUATED 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ 1. ACCESS TO SITE RESTRICTED 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ 2. POPULATION RELOCATED 04 DESCRIPTION: NO	02 DATE	03 AGENCY
01 ☐ 3. OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION: NONE	02 DATE	03 AGENCY

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

ES and O&M site inspection, 3/26/85

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D980507149

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☑ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

NONE

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NYSDEC Environmental Enforcement Division

NYS Attorney General's Office

EPA FORM 2070-13 (7-81)

SECTION VI

ASSESSMENT OF DATA ADEQUACY AND RECOMMENDATIONS

ASSESSMENT OF DATA ADEQUACY

A summary assessment of the adequacy of existing data for completion of the HRS score is presented in Table VI-1. Based on this assessment, the following Phase II work plan and cost estimate has been prepared.

PHASE II WORK PLAN

Objectives

The objectives of the Phase II activities are:

- To collect additional field data necessary to identify the occurrence and extent of contamination and to determine if any imminent health hazard exists.
- To perform a conceptual evaluation of remedial alternatives and estimate budgetary costs for the most likely alternative.
- To prepare a site investigation report including final HRS score.

The additional field data required to complete this investigation are described as follows:

Groundwater - A groundwater monitoring system consisting of two monitoring wells east of the Conrail rail yard is recommended. The purpose of these wells is to determine if the Forest Glen Subdivision site, another Phase I site, is responsible for the contamination detected at the New Road Landfill site. Borings will be drilled to a maximum depth of 20 feet; soil samples will be taken continuously. The wells will be placed in the aquifer of concern and constructed of 2" PVC pipe. The groundwater samples will be analyzed for priority pollutants. In addition, sieve and hydrometer analysis will be performed on representative samples. Finally, an in-situ permeability test will be performed on each well.

Surface Water and Sediment - A surface water and sediment monitoring system consisting of two monitoring stations is recommended. One station (S-1) will be upgradient of the site in East Gill Creek, and one station (S-2) will be downgradient of the site. The surface water and sediment samples will be analyzed for priority pollutants.

Air - An air monitoring survey with an HNU meter is recommended to test the air quality above the site.

TASK DESCRIPTION

The proposed Phase II tasks are described in Table VI-2 as required under the site specific health and safety plan and quality assurance plan which must be submitted prior to initiation of field activities. The proposed monitoring well and sampling location are presented in Figure VI-1.

COST ESTIMATE

The estimated man-hours required for the Phase II project are presented in Table VI-3 and the estimated project costs by tasks are presented in Table VI-4. The estimate total cost for this project is $31,350.

TABLE VI-1

ASSESSMENT OF DATA ADEQUACY

HRS Data Requirement	Comments on Data
Observed Release	
Groundwater	Data inadequate to score an observed release
Surface Water	Data inadequate, additional sampling required
Air	Data adequate for HRS score, no observed release
Route Characteristics	
Groundwater	Data adequate for HRS score
Surface Water	Data adequate for HRS score
Air	Not applicable, no observed release
Containment	Data adequate for HRS score
Waste Characteristics	Data inadequate for waste quantity
Targets	Data adequate for HRS score
Observed Incident	Data adequate for HRS score
Accessibility	Data adequate for HRS score

TABLE VI-2

PHASE II WORK PLAN - TASK DESCRIPTION

Tasks		Description of Task
II-A	Update Work Plan	Review the information in the Phase I report, conduct a site visit, and revise the Phase II work plan.
II-B	Conduct Geophysical Studies	No further studies necessary.
II-C	Conduct Boring/Install Monitoring Wells	Install 2 upgradient wells. The borings will be drilled to a depth of approximately 15-20 feet. Wells will be constructed of 2" PVC pipe.
II-D	Construct Test Pits/Auger Holes	No further construction of test pits/auger holes necessary.
II-E	Perform Sampling & Analysis	
	Soil samples from borings	No further studies necessary.
	Soil samples from surface soils	No further studies necessary.
	Soil samples from auger holes/test pits	No further studies necessary.
	Sediment samples from surface water	2 sediment samples are to be collected and analyzed for priority pollutants.
	Groundwater samples	2 groundwater samples are to be collected and analyzed for priority pollutants.
	Surface water samples	2 surface water samples are to be collected and analyzed for priority pollutants.

TABLE VI-2 (Continued)

PHASE II WORK PLAN - TASK DESCRIPTION

	Tasks	Description of Task
	Air samples	Using the HNu determine the presence of organics.
	Waste samples	No further sampling necessary.
II-F	Calculate Final HRS	Based on the field data collected in Tasks II-B - II-E, complete the HRS form.
II-G	Conduct Site Assessment	Prepare final report containing significant Phase I information, additional field data, final HRS and HRS documentation records, and site assessments. The site assessment will consist of a conceptual evaluation of alternatives and a preliminary cost estimate of the most probable alternative.
II-H	Project Management	Project coordination, administration and reporting.

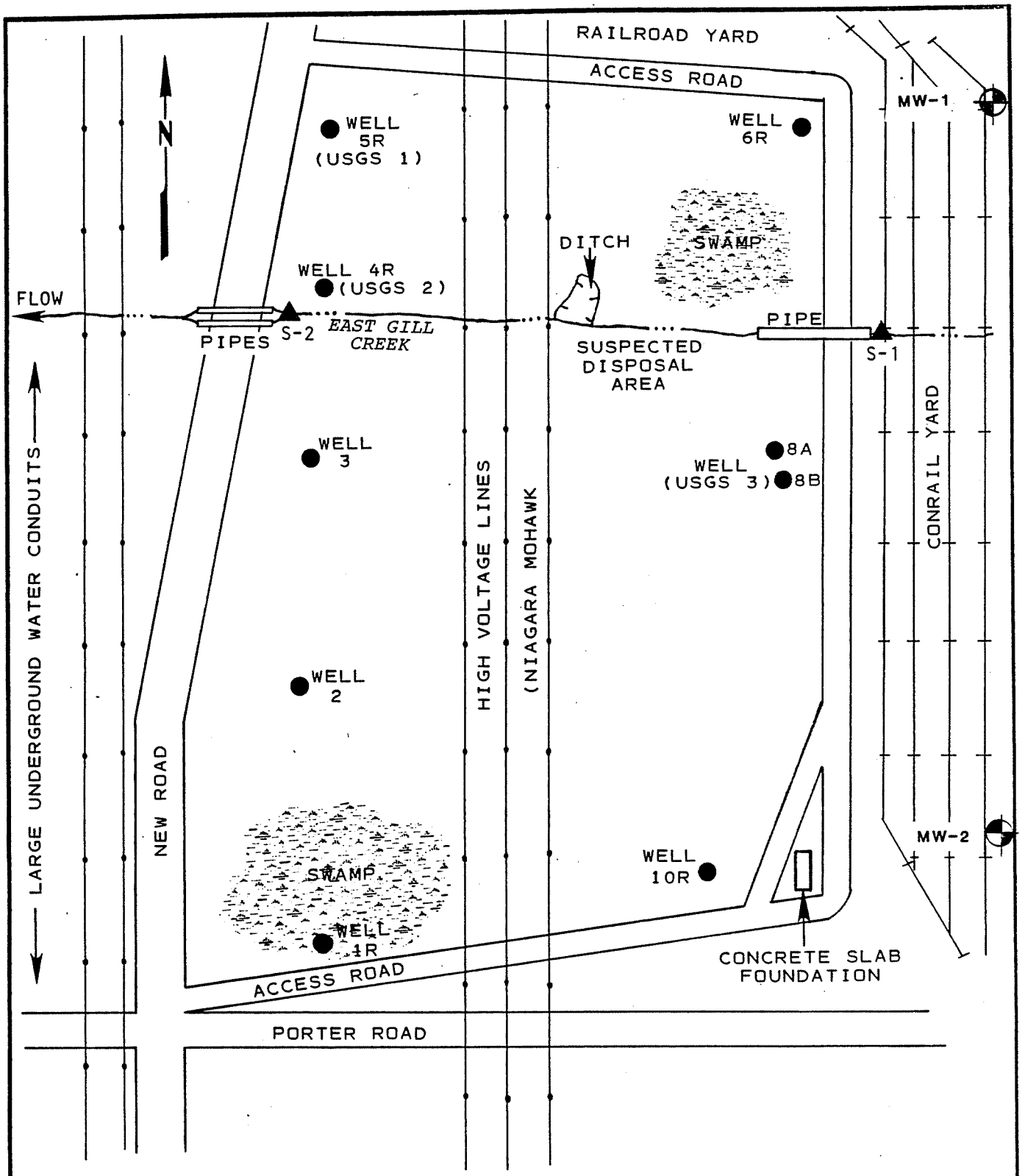
TABLE VI-3
PERSONNEL RESOURCES BY TASK
PHASE II HRS SITE INVESTIGATION (SITE: NEW ROAD)

TASK DESCRIPTION	TEAM MEMBERS, MANHOURS												TOTAL HOURS	TOTAL $
	PIC	TRB	PM	DPM	PCM	QAM	HSM	FTL	FT	RAAL	RAAT	SS		
II-A UPDATE WORK PLAN	1	1	8	4		4	4	16		8		28	74	1144.1
II-B CONDUCT GEOPHYSICAL STUDIES													0	0
II-C CONDUCT BORING/INSTALL MONITORING WELLS			8	8		4	4	16	16			8	64	1064.68
II-D CONSTRUCT TEST PITS/AUGER HOLES													0	0
II-E PERFORM SAMPLING AND ANALYSIS														
SOIL SAMPLES FROM BORINGS													0	0
SOIL SAMPLES FROM SURFACE SOILS													0	0
SOIL SAMPLES FROM TEST PITS AND AUGER HOLES													0	0
SEDIMENT SAMPLES FROM SURFACE WATER			4	4		1	1	4	14			8	36	510.59
GROUND-WATER SAMPLES			4	4		2	4	8	8			40	70	829.52
SURFACE WATER SAMPLES			4	2		1	1	4	16			4	32	440.81
AIR SAMPLES			2	2			1	2	4			2	13	214.61
WASTE SAMPLES													0	0
II-F CALCULATE FINAL HRS			4	4				4	4	2		4	22	394.56
II-G CONDUCT SITE ASSESSMENT	2	2	8	2				24	32	12	40	50	172	2217.02
II-H PROJECT MANAGEMENT	2		6	2	3	4	4					12	33	529.88
TOTALS	5	3	48	32	3	16	19	78	94	22	40	156	516	7345.77

TABLE VI-4
COST ESTIMATE BREAKDOWN BY TASK
PHASE II HRS SITE INVESTIGATION (SITE: NEW ROAD)

TASK DESCRIPTION	DIRECT LABOR HOURS	DIRECT LABOR COST	OTHER DIRECT COSTS (ODC), $ LAB ANALYSIS	TRAVEL AND SUBSISTANCE	SUPPLIES	EQUIP. CHARGES	SUBCON-TRACTORS	MISC.	SUBTOTAL ODC	TOTAL ($)
II-A UPDATE WORK PLAN	74	$1,144.10		$200.00	$50.00	$50.00		$50.00	$350.00	$1,494.10
II-B CONDUCT GEOPHYSICAL STUDIES	0	$0.00							$0.00	$0.00
II-C CONDUCT BORING/INSTALL MONITORING WELLS	64	$1,064.68							$0.00	$1,064.68
II-D CONSTRUCT TEST PITS/AUGER HOLES	0	$0.00							$0.00	$0.00
II-E PERFORM SAMPLING AND ANALYSIS										
SOIL SAMPLES FROM BORINGS	0	$0.00							$0.00	$0.00
SOIL SAMPLES FROM SURFACE SOILS	0	$0.00							$0.00	$0.00
SOIL SAMPLES FROM TEST PITS AND AUGER HOLES	0	$0.00							$0.00	$0.00
SEDIMENT SAMPLES FROM SURFACE WATER	36	$510.59	$3,200.00	$85.00	$20.00	$75.00		$50.00	$3,430.00	$3,940.59
GROUND-WATER SAMPLES	70	$829.52	$2,400.00	$85.00	$100.00	$75.00		$50.00	$2,710.00	$3,539.52
SURFACE WATER SAMPLES	32	$440.81	$2,400.00	$85.00	$20.00	$75.00		$50.00	$2,630.00	$3,070.81
AIR SAMPLES	13	$214.61				$60.00			$60.00	$274.61
WASTE SAMPLES	0	$0.00							$0.00	$0.00
II-F CALCULATE FINAL HRS	22	$394.56			$150.00	$150.00		$20.00	$320.00	$714.56
II-G CONDUCT SITE ASSESSMENT	172	$2,217.02			$750.00	$300.00		$75.00	$1,125.00	$3,342.02
II-H PROJECT MANAGEMENT	33	$529.88	$450.00	$300.00	$150.00	$50.00		$50.00	$1,000.00	$1,529.88
TOTALS	516	$7,345.77	$8,450.00	$755.00	$1,240.00	$835.00	$0.00	$345.00	$11,625.00	$18,970.77

OVERHEAD=	$10,489.76
SUBTOTAL=	$29,460.53
FEE=	$1,889.25
TOTAL PROJECT COST=	$31,349.78



NOT TO SCALE

EXPLANATION:

▲ PROPOSED SURFACE WATER AND SEDIMENT SAMPLE

⊕ PROPOSED NEW MONITORING WELL

ENGINEERING-SCIENCE, INC.
IN ASSOCIATION WITH
DAMES & MOORE

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
PHASE I REPORT

PROPOSED SAMPLING LOCATIONS
NEW ROAD

FIGURE VI-1

APPENDIX A

REFERENCES

Sources Contacted

Documentation

SOURCES CONTACTED FOR

NEW ROAD LANDFILL INVESTIGATION

CONTACT	DATE CONTACTED	PERSON CONTACTED	TELEPHONE NUMBER	LOCATION	INFORMATION COLLECTED
USEPA Headquarters, Superfund Office	4/2/85	Hamid Saebfed	(202) 382-4839	401 M Street, NW Washington, D.C. 20460	Reviewed list of sites to determine if additional information was available.
USEPA - Region II, OERR	3/22/85	Mel Hauptman	(212) 264-7681	Room 402 26 Federal Plaza NY, NY 10278	General information from site files.
NYSDEC - Division of Solid and Hazardous	12/19/84	Marsden Chen	(518) 457-0639	50 Wolf Road Albany, NY 12233	General information from site files.
NYSDEC - Division of Water	12/19/84	Sal Pagano	(518) 457-6675	50 Wolf Road Albany, NY 12233	Mr. Pagano set up meetings with three bureaus within Division of Water.
NYSDEC - Division of Water SPDES Files	12/20/84	Bob Hannaford	(518) 457-6716	50 Wolf Road Albany, NY 12233	Reviewed SPDES Files for permit numbers and conditions.
NYSDEC - Division of Water DMR Files	12/21/84	George Hansen	(518) 457-2010	50 Wolf Road Albany, NY 12233	Reviewed DMR files for discharge violations.
NYSDEC - Division of Air Toxics	12/21/84	Art Fossa	(518) 457-7454	50 Wolf Road Albany, NY 12233	Reviewed site list to identify sites with potential air emissions.
NYSDEC - Division of Monitoring and Assessment	12/21/84	Bill Berner Frank Estabrook Fred Van Alstyne	(518) 457-7363 (518) 457-7363 (518) 457-7363	50 Wolf Road Albany, NY 12233	Reviewed geology and monitoring information for specific sites.

SOURCES CONTACTED FOR
NEW ROAD LANDFILL INVESTIGATION

CONTACT	DATE CONTACTED	PERSON CONTACTED	TELEPHONE NUMBER	LOCATION	INFORMATION COLLECTED
NYSDEC - Division of Environmental Enforcement	12/20/84	Kevin Walter	(518) 457-4346	50 Wolf Road Albany, NY 12233	Reviewed list of sites to determine if legal action has occurred in the past, is in progress, and/or is scheduled in the near future.
NYS - Attorney General's Office, Dept. of Law	1/7/85	Val Washington	(518) 473-3105	Empire State Plaza Justice Building Albany, NY 12233	Reviewed list of sites to determine if legal action has occurred in the past, is in progress, and/or is scheduled in the near future.
NYS - Attorney's Office	1/3/85	Albert Bronson	(716) 847-7196	Buffalo State Office Bldg. Buffalo, NY 14202	Reviewed list of sites to determine if legal action has occurred in the past, is in progress, and/or is scheduled in the near future.
NYSDEC - Division of Solid and Hazardous Waste	1/7/85	Ahmad Tayyebi Larry Clare Peter Buechi Jack Tygert	(716) 847-4615 (716) 847-4615 (716) 847-4590 (716) 847-4585	600 Delaware Ave. Buffalo, NY 14202	Collected information from site files.
NYSDEC - Region 9 Division of Air	1/8/85	Henry Sandonato Robert Armbrust	(716) 847-4565	600 Delaware Ave. Buffalo, NY 14202	Collected information concerning previous air emissions from inactive disposal sites.

SOURCES CONTACTED FOR
NEW ROAD LANDFILL INVESTIGATION

CONTACT	DATE CONTACTED	PERSON CONTACTED	TELEPHONE NUMBER	LOCATION	INFORMATION COLLECTED
NYSDEC - Regional Attorney	1/10/85	Peter J. Burke	(716) 847-4551	600 Delaware Ave. Buffalo, NY 14202	Reviewed list of sites to determine if legal action has occurred in the past, is in progress, and/or is scheduled in the near future.
NYS Dept. of Health, Buffalo Region, Public Health Engineering	1/8/85	Lou Violanti	(716) 847-4500	584 Delaware Ave. Buffalo, NY 14202	Collected information from site files.
NYSDEC - Region 9 Division of Fish and Wildlife	1/10/85 & 1/11/85	Mike Wilkinson Jim Sneider	(716) 847-4600 (716) 847-4600	600 Delaware Ave. Buffalo, NY 14202	Collected information from site files
Niagara County Dept. of Health	1/9/85	Mike Hopkins	(716) 284-3124	Tenth & East Falls Street Niagara Falls, NY 14302	Collected information from Niagara County site files. Obtained additional information through interview.
Niagara County Dept. of Planning and Industrial Development	2/22/85	Dave Urso	(716) 439-6033	59 Park Ave. Lockport, NY 14094	Obtained 1980 U.S. Census Data.
Power Authority of the State of New York (PASNY)	4/22/85	Mr. Fitzgerald J. Malinchock	(716) 285-3211	5777 Lewiston Rd. Lewiston, NY 14092	Reviewed site history and past waste disposal practices on-site.

SOURCES CONTACTED FOR
NEW ROAD LANDFILL INVESTIGATION

CONTACT	DATE CONTACTED	PERSON CONTACTED	TELEPHONE NUMBER	LOCATION	INFORMATION COLLECTED
City of Niagara Falls Wastewater Treatment Plant	4/22/85	J. Westendorf	(716) 278-8138	WWTP 1200 Buffalo Ave. Niagara Falls, NY 14302	Requested copy of the hydrogeologic study conducted by the City of Niagara Falls in 1980.
City of Niagara Falls Sanitation Department	4/22/85	Herbert Hull	(716) 278-8151	City Hall Operations & Technical Services Niagara Falls, NY 14301	Reviewed past waste disposal practices at the New Road Landfill site.

REFERENCES

1. ES and D&M Site Inspection, March/April, 1985.

2. Freeze, R. A., and Cherry, J. A., Groundwater, 1985.

3. Johnston, Richard, H., Groundwater in the Niagara Falls Area of New York, 1965.

4. Hopkins, Mike, Niagara County Department of Health, Personal Communication, 10/12/85.

5. Malcolm Pirnie, Inc., Hydrogeologic Investigation of the New Road Landfill, 1981.

6. NCHD, Preliminary Investigation and Profile Report for Industrial Disposal Sites, March, 1982.

7. NYS Atlas of Community Water System Sources, NYS Department of Health, 1982.

8. NYS Museum and Science Service Bedrock Geology Map, Map and Chart Series No. 15 (Compiled by Richard, L.V., and Fisher, D.W.).

9. NYS Wetlands Maps (Not Provided in Appendix).

10. NYSDEC, Region 9, Division of Fish and Wildlife Files.

11. NYSDEC Registry Sheet, 12/83.

12. Power Authority of the State of New York (PASNY), Malinchock, J., Personal Communication, April 22, 1985.

13. US Census Data, 1980.

14. US Department of Commerce. "Climatic Atlas of the United States". 1979.

15. US Department of Commerce Technical Paper No. 40. "Rainfall Frequency Atlas of the United States". 1963.

16. USGS Topographic Maps: Buffalo, NY-ONT-1965 and Tonawanda West, NY - 1965 Quandrangles.

17. USGS, Draft and Final Report, Preliminary Evaluation of Chemical Migration to Groundwater and the Niagara River from Selected Waste Disposal Sites, 1982 and 1985.

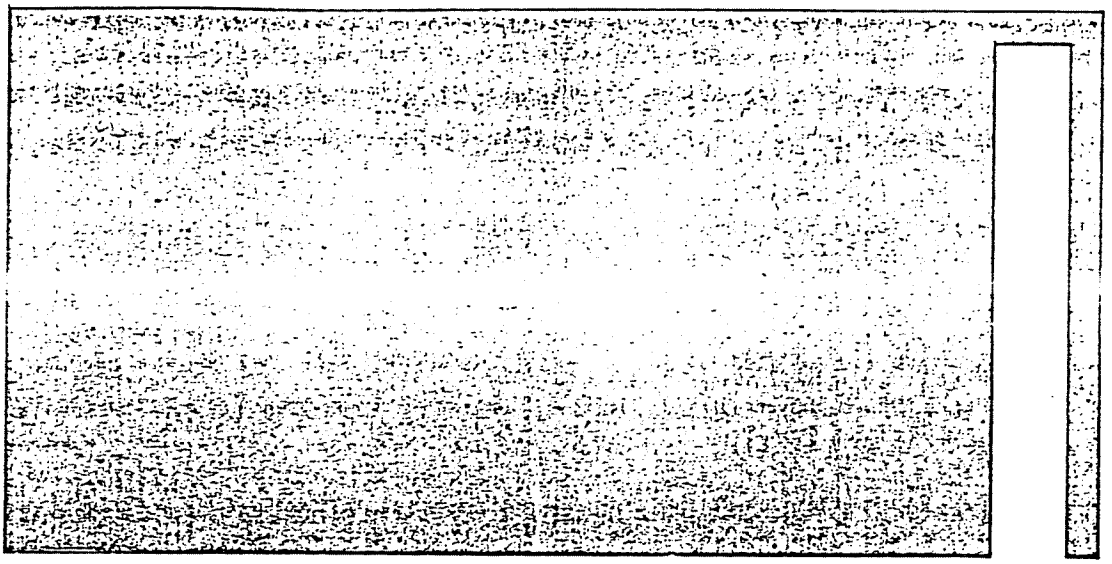
18. Westendoff, J., Niagara Falls Wastewater Treatment Plant, Personal Communication, April 22, 1985.

REF - 1

ES AND D&M SITE INSPECTION

Observations made during the ES and D&M Site Inspections are provided on US EPA Forms 2070-12 and 2070-13. Field notes were used to complete these EPA Forms, and are not included herein.

REF-2



R. Allan Freeze

Department of Geological Sciences
University of British Columbia
Vancouver, British Columbia

John A. Cherry

Department of Earth Sciences
University of Waterloo
Waterloo, Ontario

GROUNDWATER

Prentice-Hall, Inc.
Englewood Cliffs, New Jersey 07632

Table 2.2 Range of Values of Hydraulic Conductivity and Permeability

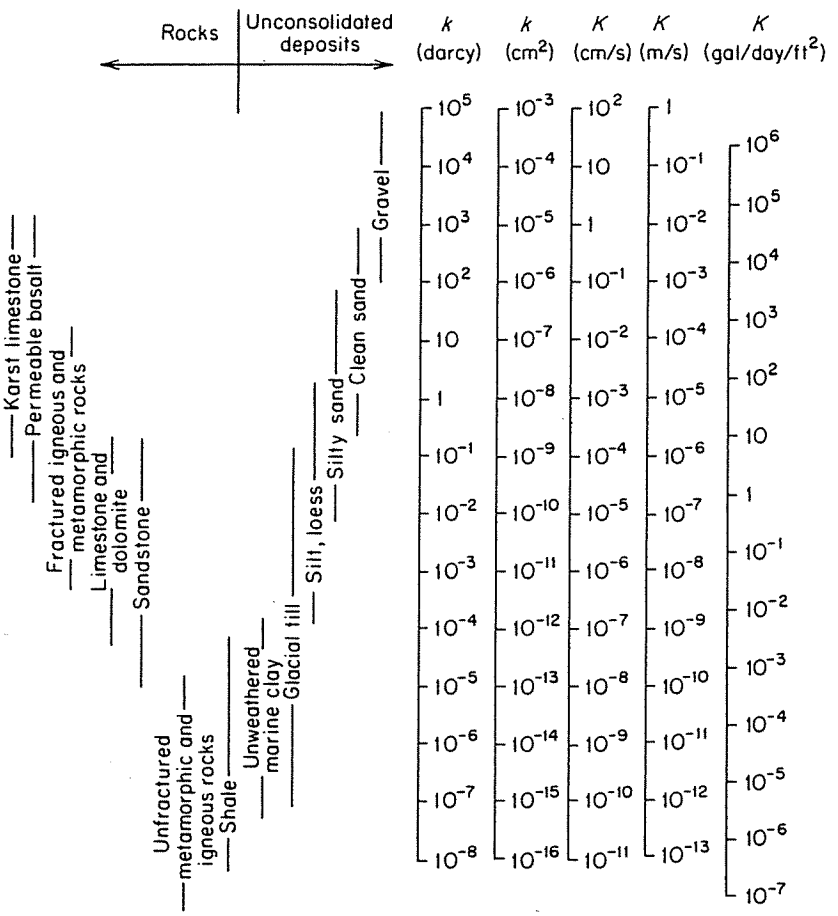


Table 2.3 Conversion Factors for Permeability and Hydraulic Conductivity Units

	Permeability, k*			Hydraulic conductivity, K		
	cm^2	ft^2	darcy	m/s	ft/s	U.S. gal/day/ft^2
cm^2	1	1.08×10^{-3}	1.01×10^{8}	9.80×10^{2}	3.22×10^{3}	1.85×10^{9}
ft^2	9.29×10^{2}	1	9.42×10^{10}	9.11×10^{5}	2.99×10^{6}	1.71×10^{12}
darcy	9.87×10^{-9}	1.06×10^{-11}	1	9.66×10^{-6}	3.17×10^{-5}	1.82×10^{1}
m/s	1.02×10^{-3}	1.10×10^{-6}	1.04×10^{5}	1	3.28	2.12×10^{6}
ft/s	3.11×10^{-4}	3.35×10^{-7}	3.15×10^{4}	3.05×10^{-1}	1	6.46×10^{5}
U.S. gal/day/ft^2	5.42×10^{-10}	5.83×10^{-13}	5.49×10^{-2}	4.72×10^{-7}	1.55×10^{-6}	1

*To obtain k in ft^2, multiply k in cm^2 by 1.08×10^{-3}.

REF-3

GROUND WATER IN THE NIAGARA FALLS AREA, NEW YORK

With Emphasis on the Water-Bearing Characteristics of the Bedrock

BY

RICHARD H. JOHNSTON

GEOLOGIST

U.S. GEOLOGICAL SURVEY

STATE OF NEW YORK

CONSERVATION DEPARTMENT

WATER RESOURCES COMMISSION

BULLETIN GW-53

1964

REF-4

INTERVIEW FORM

INTERVIEWEE/CODE Mike Hopkins /

TITLE - POSITION Niagara County Department of Health

ADDRESS 10th St

CITY Niagara Falls STATE N.Y ZIP

PHONE (716) 284-3124 RESIDENCE PERIOD TO

LOCATION phone conversation INTERVIEWER Lisa A. Ryan

DATE/TIME 10/28/85 @ 11:20 AM

SUBJECT: Use of groundwater in Niagara County

REMARKS: Mr. Hopkins provided the following information:
- There is only one industrial well within the limits of Niagara Falls that has a private water well. This company is Olin Chemical Corporation on Buffalo Ave, and the water is used for cooling purposes. (Olin Chemical employs ~200 people).
- There are 5 residences with private wells in Niagara Falls and all are within ½ mile of the Witmer Rd Site. At least one of the wells was dug rather than drilled. Municipal water is available to these residences if they choose to hookup to it.

I AGREE WITH THE ABOVE SUMMARY OF THE INTERVIEW:

SIGNATURE

COMMENTS:

REF-5

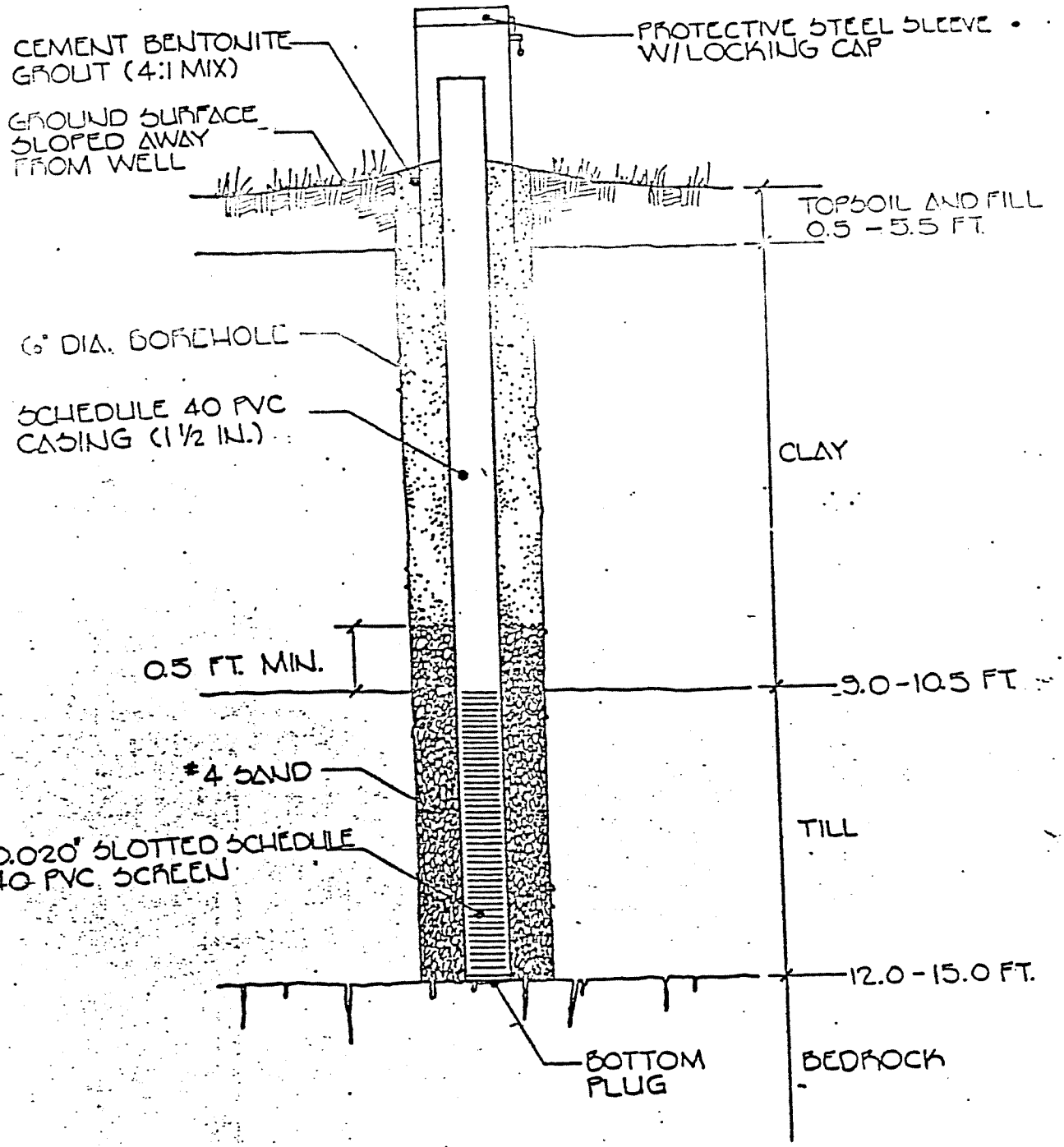
9. U.S. Army Engineering Manual 1110-2-1906; Appendix VII, 1970.

4.2.3 Geology

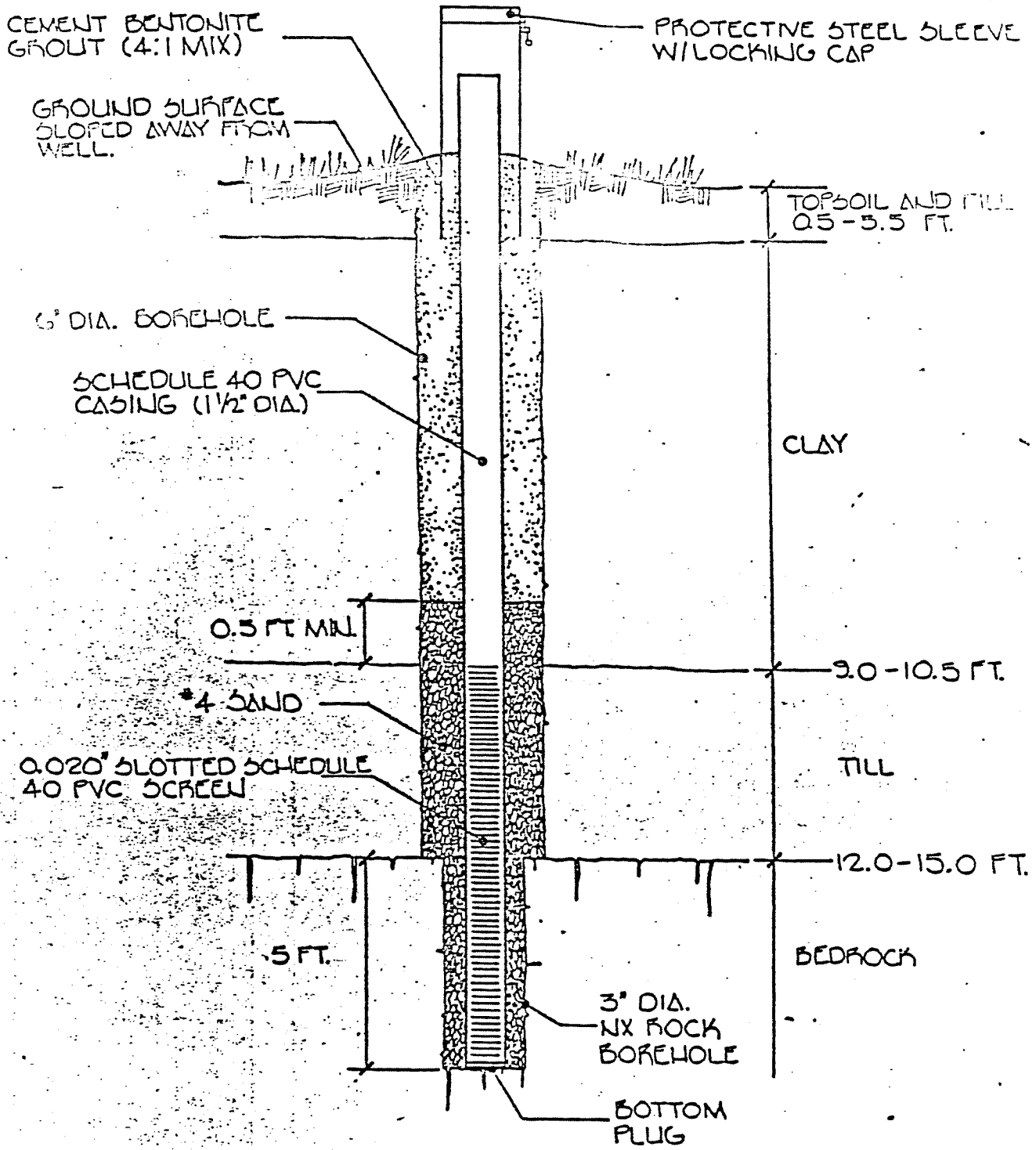
The bedrock beneath the proposed landfill site is the Lockport Dolostone. It is a gray to dark-gray, fine-grained dolomite with occasional carbonaceous (1/16-inch thick black shale) partings. It has thin to massive beds which strike approximately east-west and dip to the south at about 40 feet per mile. Gypsum (calcium sulfate) is common in the Lockport Dolostone and usually found in small irregular shaped masses and as selenite (crystalline gypsum). In the upper 15 to 20 feet of the formation, the gypsum commonly is dissolved out of the irregular shapes, and the resulting voids are called "vugs". There are two major vertical joint sets within the Lockport; one set is oriented N. 65° E. and the other N. 30° W. The depth of penetration of the vertical joints varies from a few feet to around 20 feet. There is also a horizontal joint set parallel to the bedding planes. These horizontal joints are found down through the entire formation. The Lockport Dolostone is about 125 feet thick below the proposed landfill.

Rock cores taken in the corners of the site are gray, fine-grained dolostone with black shale partings every one to two feet. There were many vugs noted; most the size of marbles, but one as large as a baseball. No vertical or horizontal joints were found in the cores.

Overlying the bedrock is a thin mantle of glacial till up to 6 feet thick. Glacial till is a dense, heterogeneous, non-stratified mixture of silt, sand, boulders,



CITY OF NIAGARA FALLS
SLUDGE SITE DEV. PLAN
TYPICAL MONITORING WELL
DETAIL
FINISHED IN TILL



CITY OF NIAGARA FALLS
SLUDGE SITE DEV. PLAN
TYPICAL MONITORING WELL DETAIL
FINISHED IN ROCK

gravel and clay deposited as advancing glaciers eroded, crushed and rode over the bedrock surface and overburden. The soil analyses show that the till is well-grade, containing mostly silt and sand with some gravel and clay, has a high attenuation capacity, is mildly alkaline and exhibits low hydraulic conductivity.

Overlying the till is six to ten feet of lacustrine sediments deposited at the bottom of pro-glacial lake Tonawanda. The soil is characteristically red-brown and varved. The top three to four feet has been physically altered by weathering giving it a mottled appearance. The soil is predominantly clay with some silt, has a high attenuation capacity, is mildly to moderately alkaline, and has an extremely low hydraulic conductivity (See Plates 1 and 2 for geologic cross sections).

There are occasional sand pockets sandwiched between the glacial till and lacustrine sediments. The average diameter of a pocket is estimated to be around 200 feet and no more than two feet thick.

Overlying the lacustrine clays is the rock spoil from the PASNY aqueducts. Based on visual inspection, the particle size ranges from silt to six-foot diameter boulders. The thickness of the deposits ranges from zero to ten feet.

4.2.4 Groundwater

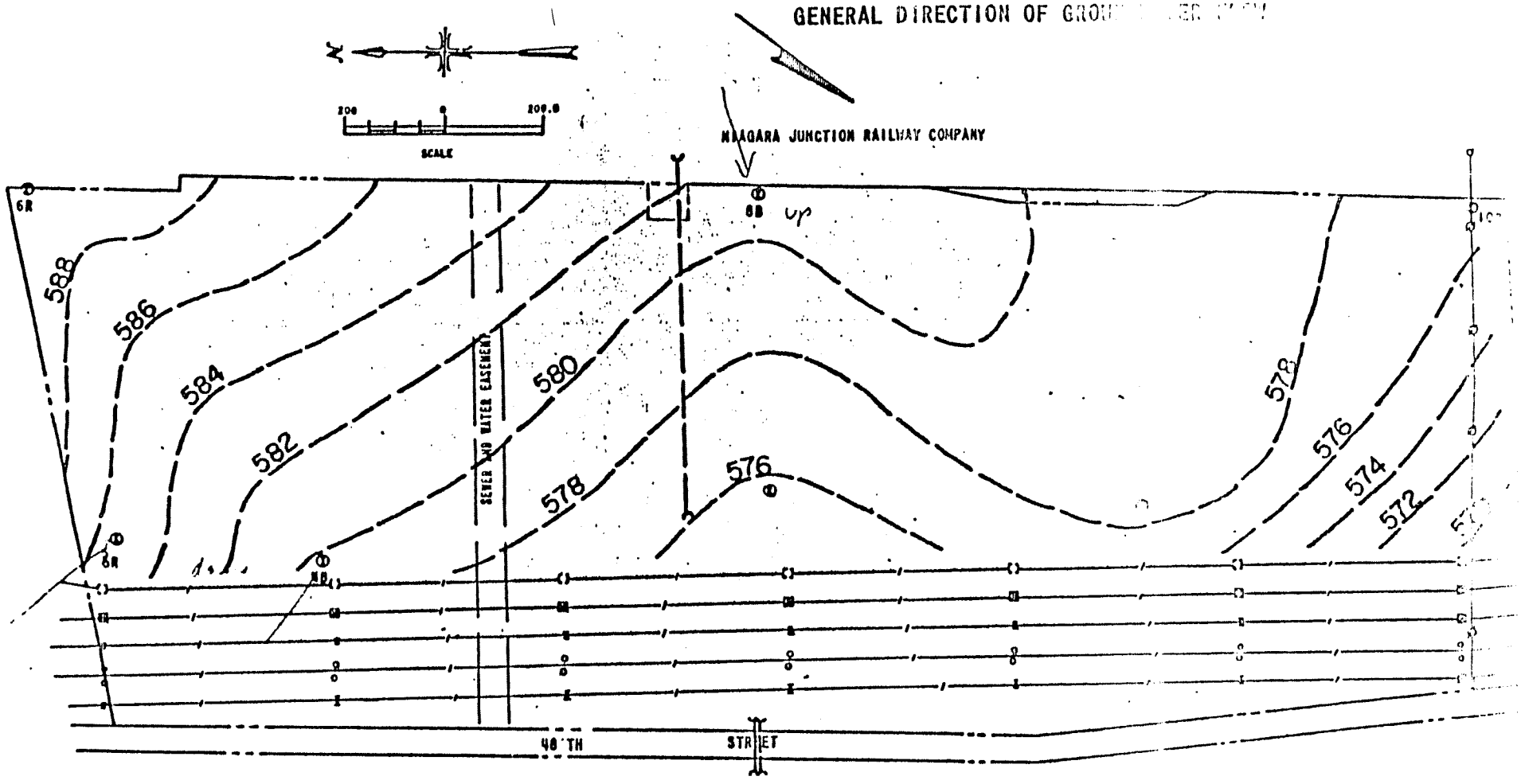
Groundwater exists in the unconsolidated soils and the bedrock. The glacially-derived unconsolidated deposits yield low quantities of groundwater and are not considered aquifers in the Niagara Falls area. The

lacustrine deposits of clay and silt have a high primary porosity, but a very low, if any at all, effective porosity. They yield water very slowly and the unit is actually considered an aquaclude (contains, but does not transmit water).

The dolostone bedrock can yield very large quantities of water and is the principal aquifer in the area. The source of water [illegible] this unit [illegible] the rock itself, but the vertical and horizontal joints, and vugs to a lesser degree. Most vugs are found within 15 feet of the bedrock surface and are not a major factor in the water yielding properties of the aquifer. However, vugs that are hydraulically connected with either vertical or horizontal joints contribute to the water yield.

The direction and rate of groundwater flow in the unconsolidated soils and upper portion (15 to 20 feet) of the bedrock is controlled by watertable conditions. The direction of groundwater flow is normal to the watertable contours. The groundwater isopotential map (See Figure 4-3), shows the existing watertable contours based on water level measurements in the monitoring wells. The isopotential map indicates the direction of groundwater flow is primarily to the southwest with some localized flow toward the drainage culvert passing through the center of the site. The rate of groundwater flow, based on Darcy velocity, is equal to the hydraulic conductivity times the hydraulic gradient. Using the steepest hydraulic gradient on the site it would take over 3,000 years for a water particle to travel through four feet of the lacustrine clay.

The direction and rate of groundwater flow deeper within the bedrock is more complex. Generally, the



LEGEND

- ⊕R ROCK BORING FINISHED AS WELL
- ⊕ SOIL BORING FINISHED AS WELL

CONTOUR INTERVAL: 2'-0"

SLUDGE CONTAINMENT SITE DEVELOPMENT
PLAN GROUNDWATER ISOPOTENTIAL MAP

CITY OF NIAGARA FALLS MARCH 1983

groundwater 15 to 20 feet below the rock surface is under artesian conditions. Water entering a horizontal joint travels southward, parallel to the bedding plane and is confined above and below by impermeable rock. The groundwater monitoring wells installed on the proposed landfill site cannot, nor were they intended to be, used to evaluate groundwater movement in the Lockport Dolostone. According to Johnston (Reference 2), the inferred direction of groundwater movement in the upper water-bearing zones of the Lockport Dolostone in the vicinity of the proposed landfill site is also to the southwest.

4.3 BACKGROUND WATER QUALITY

Under Part 703 of the New York State Code of Rules and Regulations the groundwaters of the State are classified according to best use and all fresh groundwaters are best used as sources of potable water supply. These waters have been given a "GA" classification as defined in Appendix A.

Groundwater quality standards stipulate that no raw or treated sewage, industrial wastes or ineffectively treated effluents, taste or odor producing substances, toxic wastes, thermal wastes, radioactive substances or other deleterious matter may be present which may impair the quality of groundwaters to render them unsuitable for a potable water supply. Additional water-quality standards are shown in Table 4-4 indicating maximum allowable concentrations of various contaminants at the point of discharge.

In order to establish baseline groundwater quality at the site, two sets of groundwater samples were collected approximately two weeks apart for five monitoring

wells. Three of the wells were located downgradient from the site with respect to groundwater movement and two were upgradient. Well Nos. 1, 3 and 5R were used as the downgradient monitoring stations and well Nos. 10R and 8B or 6R were used as upgradient monitoring stations. Baseline water quality data is attached as Appendix G.

In addition, two surface water samples were collected from the east branch of Gill Creek at the western mouth of the drainage conduits which pass through the site (See Appendix G).

A summary of baseline water quality sampling results is presented in Table 4-5. Evaluation of these results indicate that the overall groundwater quality is typified by alkaline pH (i.e. 7-8.5), extreme hardness (i.e. 600-1100 mg/l) and high dissolved solids concentrations (i.e. 400-2000 mg/l). The alkaline pH, extreme hardness and high dissolved solids concentration may be attributed to the highly alkaline soils and limestone bedrock with gypsum deposits which are prevalent in the area.

Extremely high pH's (i.e. 8-11) were detected in monitoring wells 5R and 6R located at the north end of the site. The cause of these high pH values is not known. Monitoring well 6R also shows relatively high calcium (640 mg/l) and sulfate (1,590 mg/l) concentrations along with extremely high specific conductance (5000 mmhos/cm). The high specific conductance value is a result of the high dissolved solids. The high sulfate and calcium concentrations are probably a result of the dissolution of gypsum which is deposited in the bedrock.

TABLE 4-5

BASELINE WATER QUALITY ANALYSIS

Parameter	Units	Monitoring Location											
		1R	3	5R	6R	10R	Creek	1R	3	5R	8B	10R	Creek
		Sample Date: 9/11/80						Sample Date: 10/3/80					
pH		7.95	7.55	8.10	11.10	8.35	7.80	7.75	7.70	9.95	7.25	7.45	9.10
Specific Conductance	µmhos/cm	1,550	1,950	2,600	5,000	900	1,250	1,500	2,100	3,000	650	1,150	1,100
Color	Pt-Co	23	28	35	30	-	53	680	30	190	15	310	25
Total Coliform	#/100 ml	39	<1	29	<1	<1	100	-	-	<1	<1	<5	1
Total Organic Carbon	mg/l	3	6	5	1	3	6	11	9	8	1	2	<1
Alkalinity (as $CaCO_3$)	mg/l	375	175	1,110	40	225	75	259	227	34	257	342	39
Hardness (as $CaCO_3$)	mg/l	945	840	1,335	1,092	550	359	880	1,020	1,090	240	560	300
Chlorides	mg/l	31	210	279	46	47	142	39	212	420	40	101	161
Sulfates	mg/l	975	813	220	1,590	242	379	730	740	221	217	382	346
Total Solids	mg/l	1,750	1,830	1,830	1,730	-	868	1,290	1,960	2,020	404	912	750
Total Phosphates	mg/l	<0.02	<0.02	0.03	0.02	0.20	0.04	<0.05	<0.1	<0.02	<0.02	0.03	<0.02
Biochemical Oxygen Demand	mg/l	3	4	5	7	4	4	-	-	1	4	3	3
Chemical Oxygen Demand	mg/l	24	18	76	35	11	24	17	22	43	4	9	13
Nitrates	mg/l	<0.03	1.46	<0.03	<0.03	2.30	1.22	<0.27	0.63	<0.19	<0.03	<0.03	4.78
Nitrites	mg/l	<0.01	<0.01	0.06	0.08	<0.01	<0.01	<0.01	<0.01	0.16	<0.01	<0.11	<0.01
Kjeldahl Nitrogen	mg/l	<0.1	<0.25	<0.1	<0.10	-	<0.1	-	-	<0.15	<0.10	0.15	<0.15
Ammonia Nitrogen	mg/l	0.36	-	<0.05	0.18	-	<0.05	-	-	<0.10	0.15	0.10	<0.10
Surfactants (MBAS)	mg/l	<0.02	-	0.05	<0.02	-	<0.02	-	-	<0.02	<0.02	<0.02	<0.02
Phenols	mg/l	0.021	-	0.015	0.011	-	0.036	<0.002	-	<0.002	0.078	<0.002	<0.002
Total Chromium	mg/l	<0.02	<0.02	<0.02	0.21	<0.02	0.22	<0.02	<0.02	<0.02	0.02	<0.02	0.35
Hexavalent Chromium	mg/l	<0.02	<0.02	<0.02	0.035	<0.02	0.055	<0.02	<0.02	<0.02	<0.02	<0.02	0.070
Iron	mg/l	2.2	0.09	0.87	0.17	0.79	0.07	0.10	0.09	0.21	0.08	0.07	0.04
Copper	mg/l	0.02	0.02	0.02	0.02	<0.02	<0.02	0.02	0.02	<0.02	0.02	<0.02	0.02
Aluminum	mg/l	3.5	<0.1	0.4	0.4	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium	mg/l	135	140	130	640	22	82	130	155	160	29	85	87
Sodium	mg/l	37	105	225	99	51	106	39	110	275	43	62	116
Potassium	mg/l	7.7	22	6.9	105	40	9.7	3.1	10	3.0	26	4.7	11.5
Lead	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Mercury	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Arsenic	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Silver	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03

REF-6

PRELIMINARY INVESTIGATION AND PROFILE REPORTS FOR TWENTY-SIX SUSPECTED INDUSTRIAL DISPOSAL SITES IN NIAGARA COUNTY, NEW YORK.

PREPARED BY

NIAGARA COUNTY HEALTH DEPARTMENT
10TH & E. FALLS STREETS
NIAGARA FALLS, NEW YORK 14302

MARCH, 1982

NAME

NEW ROAD (DEC #932083)

LOCATION

The site occupies part or all of a 48.7 acre parcel located northeast of the intersection of New Road and Porter Road. The site is bounded by the Conrail Right-of-Way to the east and north, an access road to the Conrail [illegible] and the Niagara Mohawk transmission corridor to the west.

OWNERSHIP

The property is owned by the Power Authority of the State of New York. (PASNY Parcel #1305)

HISTORY

This site was operated by the City of Niagara Falls during the 1950's as a dump for non-combustibles and incinerator residue. It is not known whether any industrial waste was deposited here. According to the Inter Agency Task Force, a fish kill in Gill Creek in 1954 or 1955 is attributed to leachate from this site.

The Power Authority used this site for disposal of rock spoils and clean fill from the Power Project excavations from 1958 to 1962. The property has been idle since this time.

The City of Niagara Falls proposed the use of this site as a sludge containment facility for disposal of municipal sewage sludge. A study and report were made in early 1981 and a permit for construction was issued by DEC in September, 1981. The City has since abandoned the proposal, at least temporarily. No construction has occurred on this site.

Currently, the site is idle. Recent inspections found some evidence of scavenger dumping of refuse and construction debris. No signs of industrial wastes were found. The site contains numerous depressions and mounding, spare vegetation and some areas appear to be susceptable to ponding.

RESULTS OF PREVIOUS SAMPLING

No record of any previous sampling at this site was found at this time.

INTERPRETATION OF AERIAL PHOTOGRAPHS

1958 and 1966 USDA aerial photographs were examined. The photos showed that rock spoils were placed between 1958 and 1966 and that the power lines on the adjacent Niagara Mohawk Property and the Conrail Yard had been developed during this period. No evidence of previous disposal activities was found on either photo.

SOILS/GEOLOGY

The soils in this area have been modified by the disposal activities here. According to the Environmental Impact Statement written by Malcolm Pirnie, Inc. for the proposed sludge containment facility, the general soil profile is composed of top soil, rock shot and fill to two feet, over stiff mottled clay to six feet, over very stiff varved clay to twelve feet, over sand, silt and glacial till to bedrock at 18.8 to 21 feet below the surface.

Bedrock is Lockport Dolomite. The Lockport is the water bearing material.

Four bedrock and four overburden wells are present on the site. These are believed to have been drilled as part of the hydrogeological study made in conjunction with design of the sludge containment facility. The boring logs for these wells are believed to be present in the Engineering Design Report prepared by Malcolm Pirnie in March, 1981.

GROUNDWATER

The principal aquifer is expected to be the bedrock aquifer although groundwater is also likely to be present in the unconsolidated material. Unconfined groundwater is expected in the top layers of the Dolomite, while artesian aquifers are expected 15 to 20 feet below the rock surface.

According to Malcolm Pirnie, the groundwater flow in the upper zones of the bedrock is generally toward the southwest. The baseline data indicates that high pH, high disolved solids, extreme hardness and low level chromium and bacteriological contamination make this water unusable for domestic or industrial use.

There are no known drinking water wells in this area. There are no known users of groundwater within three miles.

SURFACE WATER

The nearest surface water is Gill Creek, which passes beneath the site via a 52" drain pipe. At one time Gill Creek passed over this area. Hyde Park Lake, an impoundment of Gill Creek is 4,500 feet downstream. Water quality in Gill Creek is considered to be poor. The creek enters the Niagara River 2½ miles downstream, at a point below the city water intakes.

Uses of Gill Creek are only recreational and scenic. No drinking or industrial water is drawn from this creek.

There are no wetlands within one mile. The site is not in a 100 year flood plain.

AIR

There have been no complaints of odors or other air problems at this site.

IV. (continued)

The nearest residential areas are the Forest Glen and Expressway Village Trailer Parks located 500 feet to the east. 2,500 to 3,000 people live within a one mile radius. The nearest commercial area is the Twin Fair Plaza, 1,500 feet east. The nearest industry is Pyron Metals, over one-half mile away. A railroad yard ajoins the property. Hyde Park Golf Course is 500 feet west of the site.

FIRE AND EXPLOSION

The potential for fire or explosion is unknown. Although the wastes known to be disposed of here are reported to be incombustable, there is a possibility that other wastes are present.

Over 10,000 people live within a two mile radius. Over 1,000 buildings and 200 Mobile Homes are located within two miles. The nearest off-site building is at the Foote Conrail Switch Yard, less than 100 feet east of the site.

DIRECT CONTACT

There is no evidence of any exposed wastes at this site. Access to the site is restricted by signs, but not by fencing or other physical means.

CONCLUSIONS

Additional data is needed to determine the extent of contamination of soil or groundwater, if any. The wells on-site appear to be adequate for sampling and appear suitably located. Observation holes could be dug at random points. The large rock fragments present would prevent hand dug holes. Access for equipment is available over most of this site. Surface water samples above and below the Gill Creek Culvert could be readily taken.

Continued inspections are recommended. Any future excavation or development of this property should be monitored by the DEC or the Niagara County Health Department.

New York State Atlas of Community Water System Sources

NEW YORK STATE
DEPARTMENT OF HEALTH

1982

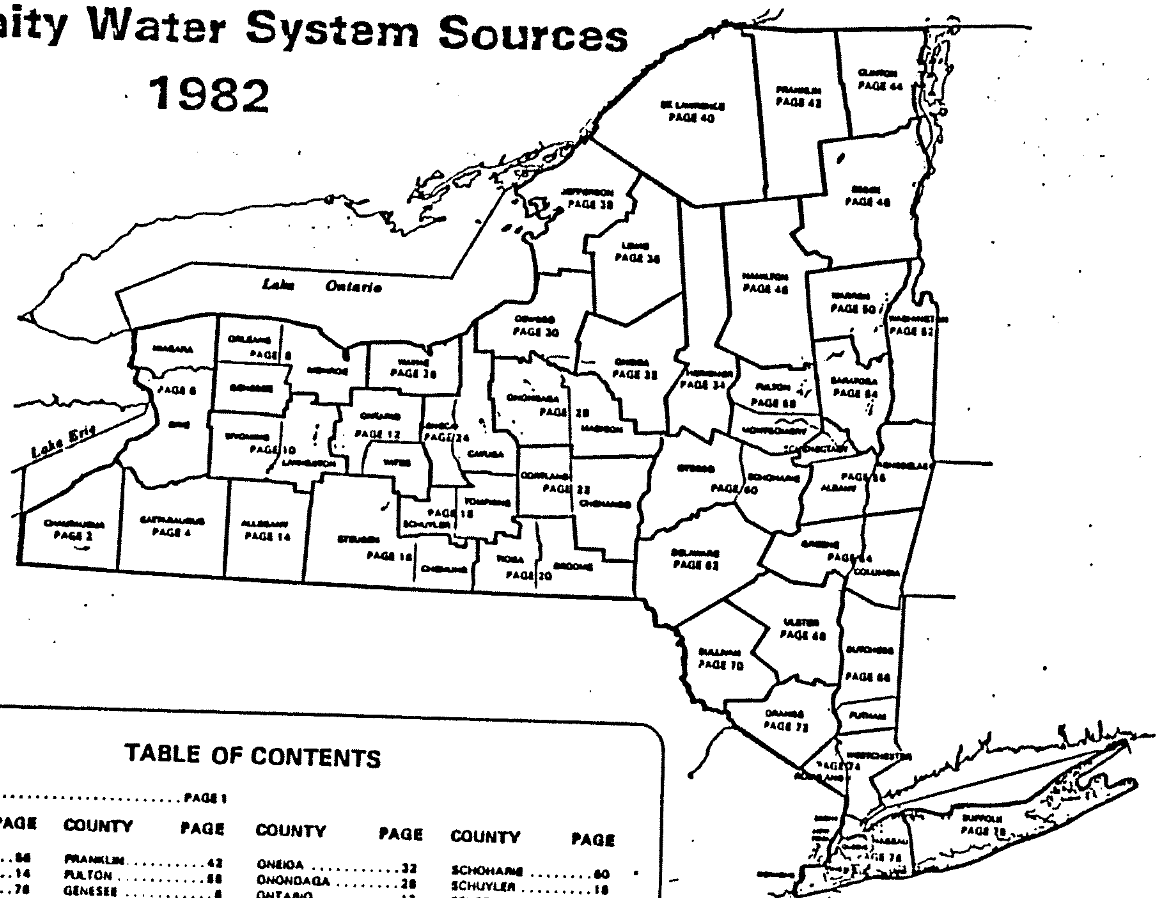


TABLE OF CONTENTS

REF-7

LEGEND

BOUNDARIES AND PLACES

International
State
County
Town
Indian Reservation
City — Village
Unincorporated Place — Federal Reservation
Built-up Area (Over 25,000 population including any contiguous city or village)

CLASSIFICATION OF POPULATED PLACES

100,000 or more .... YONKERS
50,000 to 100,000 .... Levittown
12,500 to 50,000 .... Poughkeepsie
2,500 to 12,500 .... Hampton Bays
250 to 2,500
250 or less

TRANSPORTATION

Highways
Divided Highways
Full Control of Access
Partial or No Control of Access
Undivided Highway
Interchange
Touring Route (State, U.S., Interstate) or State Parkway
Touring Route Markers
State; U.S.; Interstate
Railroads
Operating Line — Service Discontinued
Operator
Owner (If Other than Operator)
Company Having Trackage Rights
Airports (Open to the Public, Military)
Runway under 4000' — Runway over 4000'
Rest Areas
Food, Gas, Rest Rooms — Rest Rooms
Gas, Rest Rooms — Parking Only

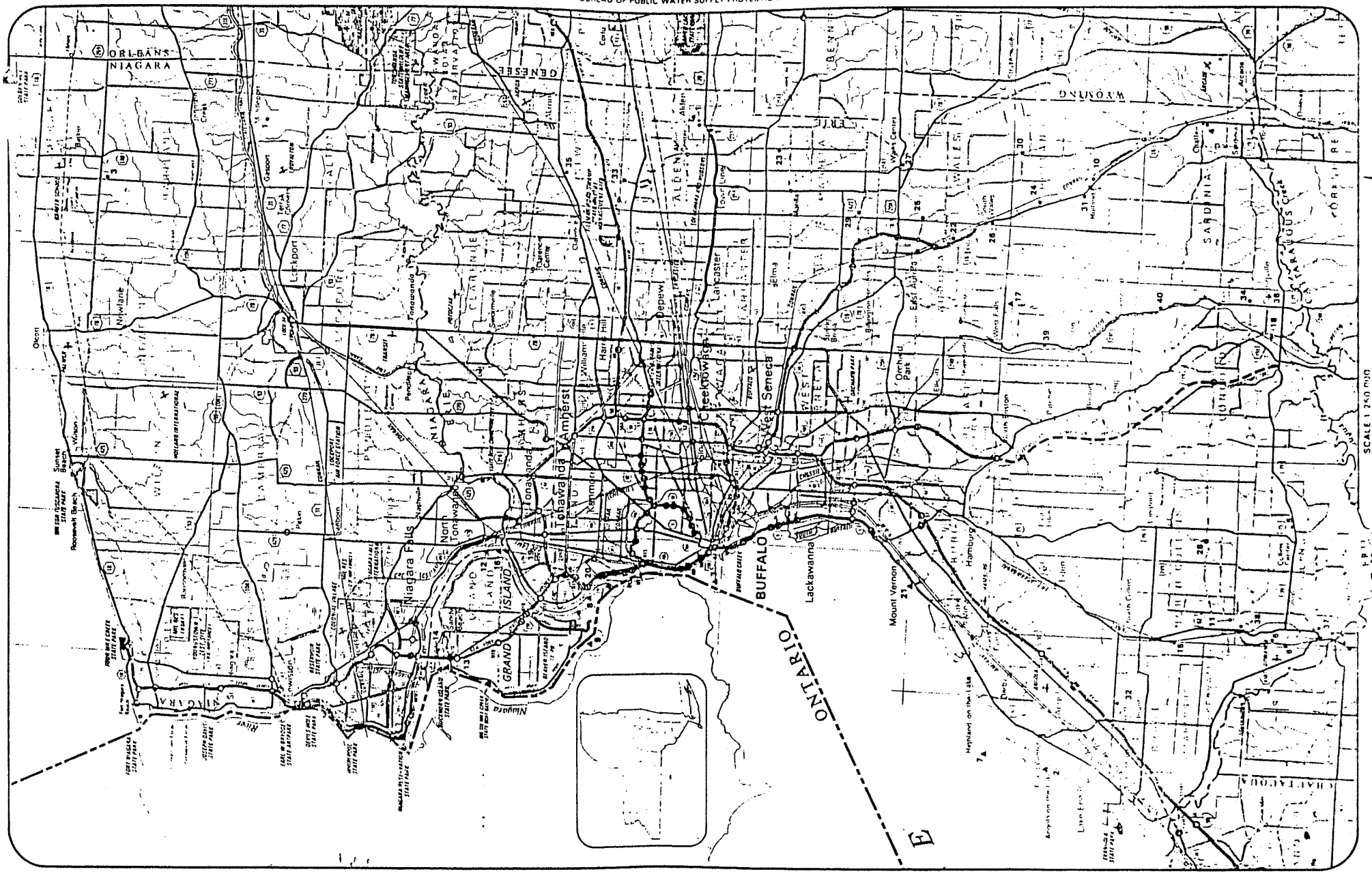
RECREATION FACILITIES

State or National Recreation Area
State Campground
State Boat Launching Site
State Canal Park
State Fish Hatchery
Other State Recreation Site

LOCATION OF COMMUNITY WATER SYSTEM SOURCES-1982

DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

ERIE and NIAGARA COUNTIES



ADAPTED FROM THE FOUR SHEET 1:250,000 SCALE NEW YORK STATE MAP © 1980 BY THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION

GEOLOGIC MAP OF NEW YORK

1970

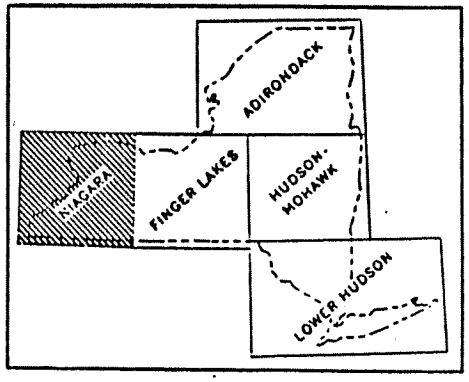
Niagara Sheet

Scale 1:250,000

5 0 5 10 15 Statute 20

5 0 5 10 15 20 25 Kilometers 30

CONTOUR INTERVAL 100 FEET



Topographic Base from AMS Quadrangles 1:250,000 scale.

NEW YORK STATE MUSEUM AND SCIENCE SERVICE
MAP AND CHART SERIES NO. 15

COMPILED AND EDITED BY
Lawrence V. Rickard
Donald W. Fisher

March, 1970

REF-8

REF-9

NYS WETLANDS MAPS

NYS Wetlands Maps were reviewed during the Phase I investigation. Individual maps for each site were not obtained and are, therefore, not included in the Phase I reports. Site specific information collected concerning the location of a wetland within 1 mile of a given site is recorded in the documentation section of each report.

REF-10

INTERVIEW FORM

INTERVIEWEE/CODE Jim Sneider Mike Wilkenson /

UNIT - POSITION NYSDEC, Div of Fish & Wildlife

ADDRESS Delaware Ave.

CITY Buffalo STATE NY ZIP

PHONE ( ) RESIDENCE PERIOD TO

LOCATION in DEC office INTERVIEWER Eileen Gilligan

DATE/TIME 1/10/85 / 1/11/85 /

SUBJECT: Phase I site information

REMARKS: The above-named interviewees provided us with the following information regarding our Phase I site. (see attached list)

1) Wetlands in Niagara Co. & proximity to sites
2) Types of fish & wildlife in Erie/Niagara area
3) Use by fish & wildlife of Niagara River & tributaries
4) Sensitive environments & proposed wetlands in the Erie/Niagara area

New Road Landfill

There are ~~not~~ no critical habitats of endangered species within 1 mile of the site

I AGREE WITH THE ABOVE SUMMARY OF THE INTERVIEW:

SIGNATURE: James R. Snider - Sr. Wildlife Biologist
Michael A. Wilkinson - Conservation Biologist (Aq Biotic)

COMMENTS: No discussion of wetlands/wildlife regarding Mina Landfill site - referred to Olean Office

REF-11

(47-15-11 (10/83)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF SOLID AND HAZARDOUS WASTE

INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

PRIORITY CODE: 2a SITE CODE: 932083

NAME OF SITE: New Road REGION: 9

STREET ADDRESS: New Road north of Porter Road

TOWN/CITY: Niagara Falls (c) COUNTY: Niagara

NAME OF CURRENT OWNER OF SITE: Power Authority of the State of New York

ADDRESS OF CURRENT OWNER OF SITE: Niagara Falls, NY

TYPE OF SITE: OPEN DUMP [X] STRUCTURE [ ] LAGOON [ ]
LANDFILL [ ] TREATMENT POND [ ]

ESTIMATED SIZE: _____ ACRES

SITE DESCRIPTION:

The site was used by the City of Niagara Falls during the 1950's as a dump for non-combustibles and incinerator refuse. A fishkill in Gill Greek in 1954 or 1955 was attributed to the leachate from this site. PASNY used this site for disposal of rock spoils and clean fill from the power project excavations from 1958 to 1962.

USGS collected water samples from each of three monitoring wells at the site. Results indicate the presence of an organic compound in the samples in low concentration. The groundwater standard for iron was exceeded in all samples.

HAZARDOUS WASTE DISPOSED: CONFIRMED [ ] SUSPECTED [X]

TYPE AND QUANTITY OF HAZARDOUS WASTES DISPOSED:

TYPE	QUANTITY (POUNDS, TONS, DRUMS, GALLONS)
None known	

TIME PERIOD SITE WAS USED FOR HAZARDOUS WASTE DISPOSAL:

_____, 1950's TO _____, 19 62

OWNER(S) DURING PERIOD OF USE: Power Authority of the State of New York

SITE OPERATOR DURING PERIOD OF USE: City of Niagara Falls, Power Authority of NYS

ADDRESS OF SITE OPERATOR: City Bldg., 745 Main St., Niagara Falls, NY 14305

ANALYTICAL DATA AVAILABLE: AIR ☐ SURFACE WATER ☐ GROUNDWATER ☒
SOIL ☐ SEDIMENT ☐ NONE ☐

CONTRAVENTION OF STANDARDS: GROUNDWATER ☒ DRINKING WATER ☐
SURFACE WATER ☐ AIR ☐

SOIL TYPE: Top soil and fill overlying clay.

DEPTH TO GROUNDWATER TABLE: Approximately 7'

LEGAL ACTION: TYPE: None STATE ☐ FEDERAL ☐

STATUS: IN PROGRESS ☐ COMPLETED ☐

REMEDIAL ACTION: PROPOSED ☐ UNDER DESIGN ☐

IN PROGRESS ☐ COMPLETED ☐

NATURE OF ACTION: None

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

USGS analysis of water samples indicates the presence of organic parameters in the samples. More investigation is required to determine and confirm the presence of the organic compounds in the groundwater.

ASSESSMENT OF HEALTH PROBLEMS:

[illegible]

PERSON(S) COMPLETING THIS FORM:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NAME Abul Barkat
TITLE Sr. San. Engineer
NAME Peter Buechi
TITLE Associate San. Engineer
DATE: November 18, 1983

NEW YORK STATE DEPARTMENT OF HEALTH

NAME R. Tramontano
TITLE Bur. Tox. Subst. Assess.
NAME
TITLE
DATE: 12/83

REF-12

INTERVIEW FORM

INTERVIEWEE/CODE John Malinchock /

TITLE - POSITION New York Power Authority

ADDRESS 5777 Lewiston Road

CITY Lewiston, NY STATE 14092 ZIP 14092

PHONE (716) 285-3211 RESIDENCE PERIOD ____ TO ____

LOCATION Telephone Interview INTERVIEWER S. Robert STEELE, II

DATE/TIME 4/22/85 / 4:45 PM

SUBJECT: PHASE I Investigation of the New Road Landfill

REMARKS: The New Road landfill site was operated during the 1950's by the City of Niagara Falls for the disposal of incinerator ash and non-combustible refuse. The NYS Power Authority purchased the site in 1958 and used the site for the disposal of rock spoils from the construction of power tunnels until approximately 1962-3. The landfill site was used again by the City of Niagara Falls for burning of trees, brush etc around 1969. In 1980, the City of Niagara Falls proposed that the site be used for the disposal of WTP sludge. The project was approved but was not conducted.

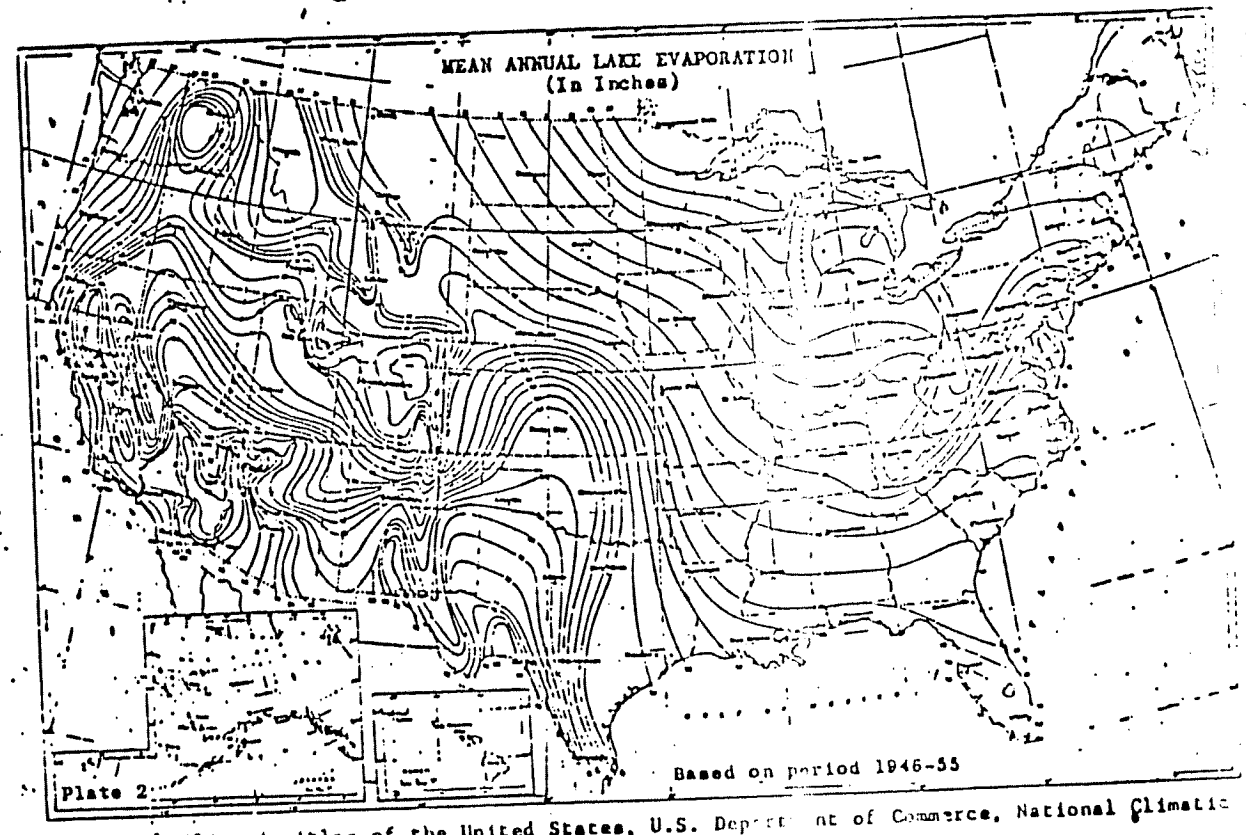
I AGREE WITH THE ABOVE SUMMARY OF THE INTERVIEW:

SIGNATURE:

COMMENTS:

US CENSUS DATA, 1980

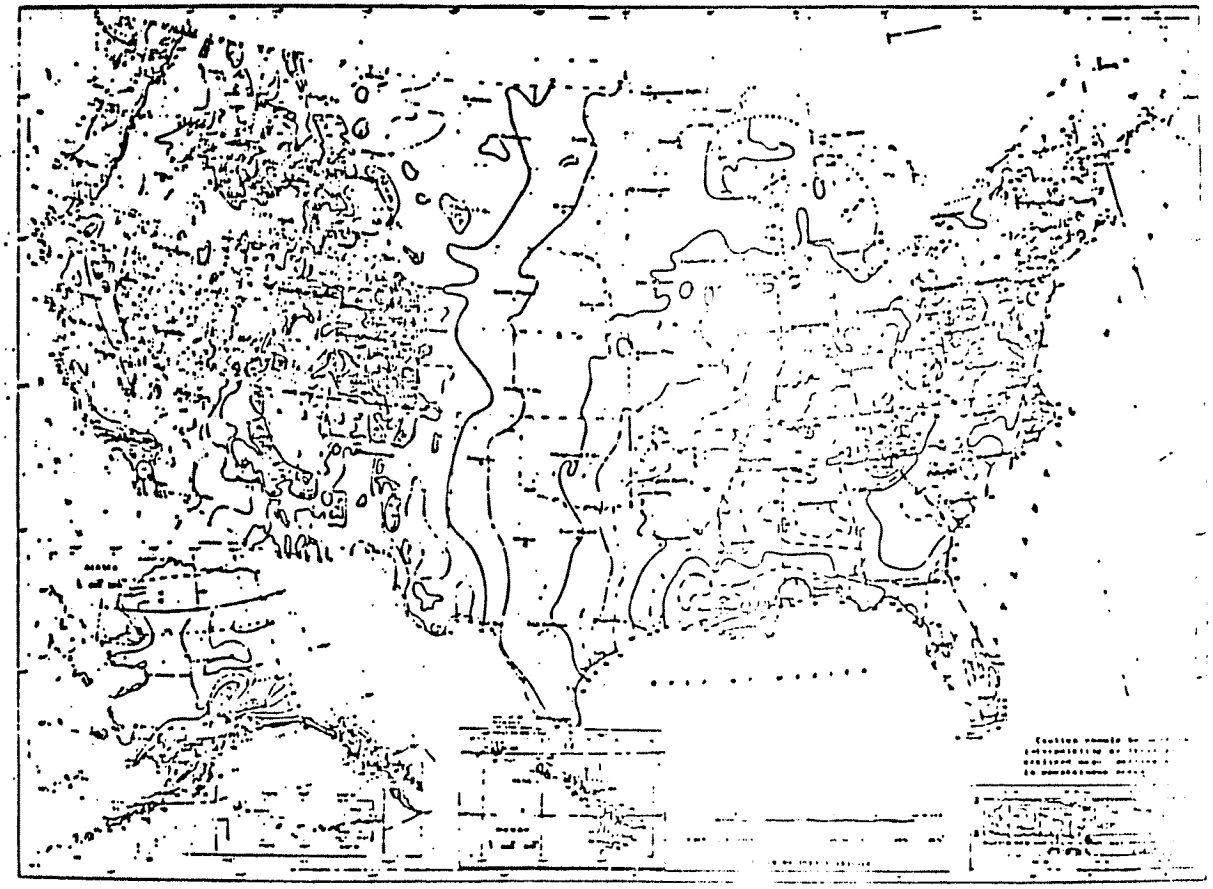
US Census Data used in the HRS scoring was obtained from various County Planning Offices. This data was not obtained from a report. The raw census data combined with County Planning Maps was used to estimate the population within 1, 2, 3, and 4 miles of the Phase I site being investigated. Because of the voluminous amount of data used, the data is not provided in this Appendix.



Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Ashville, N.C., 1979.

Figure 4

Mean Annual Lake Evaporation

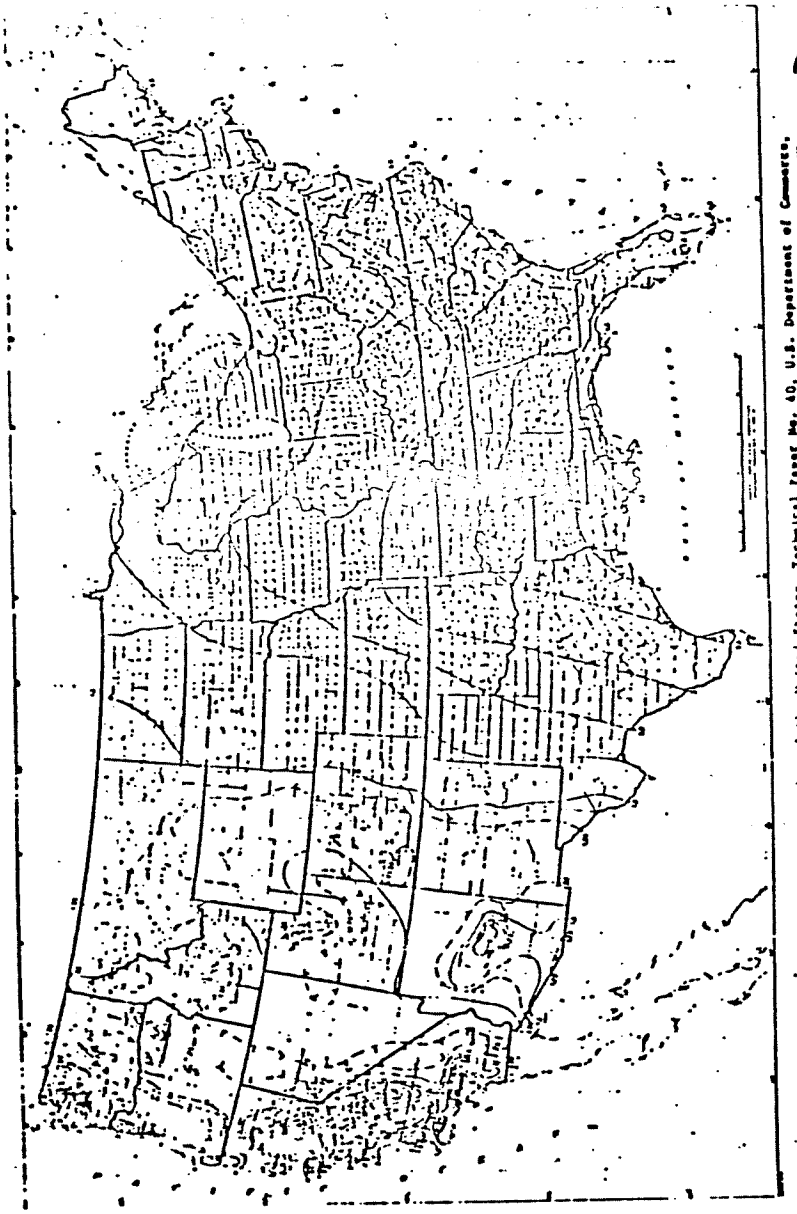


Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Asheville, N.C., 1979.

Figure 5

Normal Annual Total Precipitation (Inches)

RER-15

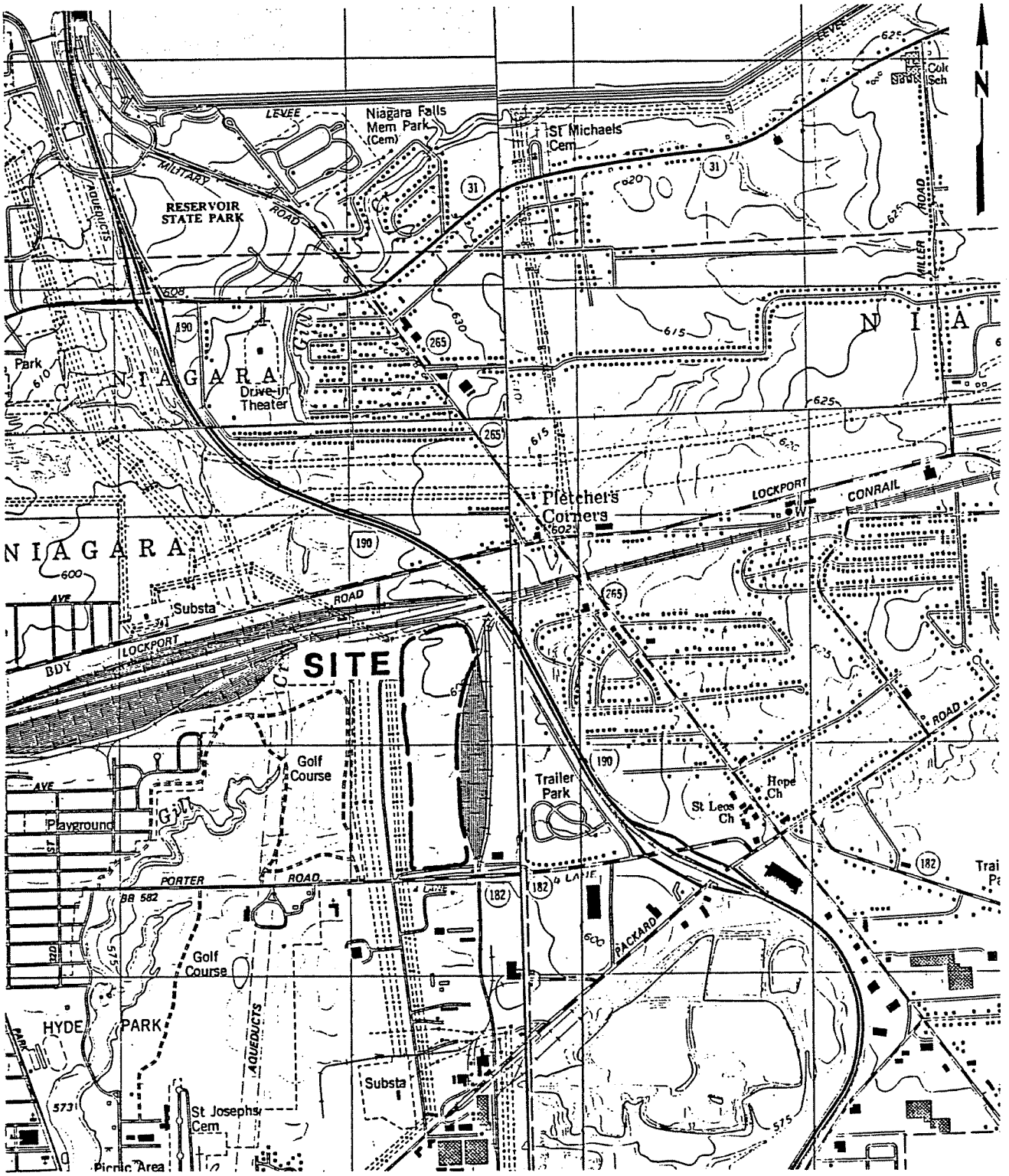


Source: Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1963.

Figure 8

1-Year 24-Hour Rainfall (Inches)

REF - 16



LATITUDE: 43°06'39"
LONGITUDE: 79°00'15"

SCALE

0 1000 2000 3000 4000 FEET

ENGINEERING-SCIENCE, INC.
IN ASSOCIATION WITH
DAMES & MOORE

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
PHASE I REPORT

SITE LOCATION MAP

NEW ROAD

FIGURE I-1

REFERENCE: U.S.G.S. 7.5' Topographic Map Niagara Falls, NY-ONT. (1980), Lewiston, NY-ONT. (1980), Tonawanda West, NY (1980) and Ransomville, NY (1980) Quadrangles

REF- 17

87. NEW ROAD SITE 932083.

General Information and Chemical-Migration Potential

The site is located in the city of Niagara Falls and is shown on plate 3.

The site was used to dispose of an unknown quantity of noncombustibles and incinerator residue.

The site contains three monitoring wells (fig. 1).

Data available indicate the potential for contaminant migration to be minimal but additional monitoring may be needed to confirm this.

Geologic Information

The site is assumed to consist of a glacial ground moraine deposit overlying bedrock of Lockport Dolomite.

Hydrologic Information

The direction of regional ground-water flow is probably southward.

Chemical Information

A water sample was collected by the U.S. Geological Survey in 1982 from each monitoring well and was analyzed for heavy metals and organic compounds. Results are given in table ___. Iron, lead, and maganese concentrations exceeded USEPA criteria for drinking water in all three samples. The only organic priority pollutant found was di-n-butylphthalate (less than the quantifiable detection limit). There were four organic nonpriority pollutants found.

Table .--Analyses [illegible] water samples from [illegible], [illegible], N.[illegible], July 8, 1982. (Locations shown in fig. . Concentrations are in µg/L; dashes indicate that constituent or compound was not found, LT indicates it was found but below the quantifiable detection limit.)

	Sample number and depth below land surface (ft)		
	1 20.3	2 14.3	3 15.8
pH	6.7	7.0	7.0
Specific conductance (µmho/cm)	3,200	3,260	1,200
Temperature (°C)	12.0	12.0	12.0
Inorganic Constituents			
Aluminum	2,400	1,380	2,220
Antimony	--	--	--
Arsenic	--	--	--
Barium	974	382	454
Beryllium	--	--	--
Cadmium	7	9	13
Chromium	23	58†	34
Cobalt	--	55	84
Copper	--	83	--
Iron	41,000†	41,900†	13,000†
Lead	71†	66†	128†
Manganese	4,940†	1,640†	4,220†
Mercury	--	--	--
Nickel	--	68	77
Selenium	--	--	--
Silver	--	12	15
Tellerium	--	--	--
Vanadium	--	--	--
Zinc	269	209	316
Organic compounds			
Priority pollutant			
Di-n-butylphthalate	--	LT	--
Nonpriority pollutants			
2,4,6-Trimethyl-1,3,5-trioxane[1]	26	--	--
2-Ethyl-1-hexanol[1]	17	--	--
2-(2-Butoxyethoxy)-ethanol[1]	--	150	--
1,3-Dimethylbenzene[1]	--	--	26

[1] Tentative identification based on comparison with the National Bureau of Standards (NBS) library. No external standard was available. Concentration reported is semiquantitative and is based only on an internal standard. GC/MS spectra were examined and interpreted by GC/MS analysts.

† Exceeds USEPA criterion for maximum permissible concentration in drinking water.

87. NEW ROAD SITE (USGS field reconnaissance) NYSDEC 932083

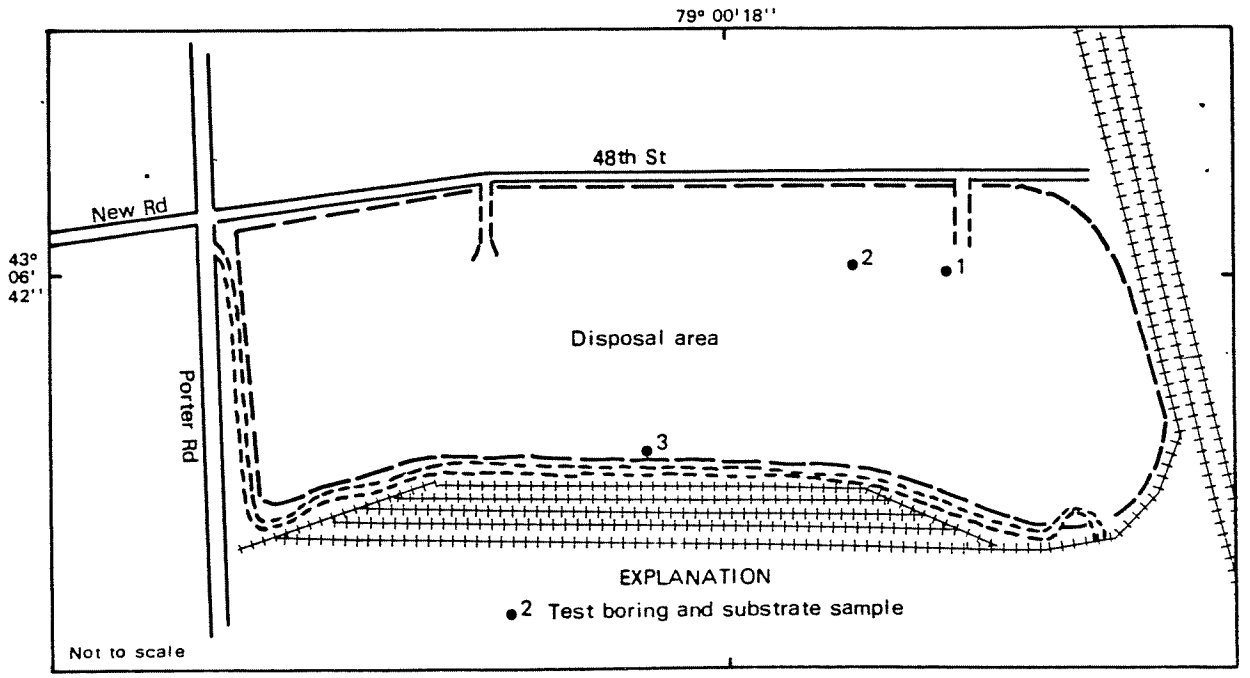
General information and chemical-migration potential.--The New Road site, in the city of Niagara Falls, was used to dispose of an unknown quantity of non-combustibles and incinerator residue. The site contains three monitoring wells (fig. C-46).

The potential for contaminant migration is indeterminable.

Geologic information.--The site is assumed to consist of a glacial ground moraine deposit overlying bedrock of Lockport Dolomite.

Hydrologic information.--The direction of regional ground-water flow is probably southward.

Chemical information.--The U.S. Geological Survey collected a water sample in 1982 from each monitoring well for heavy-metals and organic-compound analyses. Results are given in table C-26. Iron, lead, and maganese concentrations exceeded USEPA criteria for drinking water in all three samples; aluminium was much higher than normal. The only organic priority pollutant found was di-n-butyl phthalate (less than the quantifiable detection limit). Four organic nonpriority pollutants were found.



Base from USGS field sketch, 1982

Figure C-46. Location of monitoring wells at New Road, site 87, Niagara Falls

Table C-26.--Analyses of ground-water samples from New Road, site 87, Niagara Falls, N.Y., July 8, 1982.

[Locations shown in fig. C-46. Concentrations are in µg/L; dashes indicate that constituent or compound was not found, LT indicates it was found but below the quantifiable detection limit.]

	Sample number and depth below land surface (ft)		
	1 (20.3)	2 (14.3)	3 (15.8)
pH	6.7	7.0	7.0
Specific conductance (µmho/cm)	3,200	3,260	1,200
Temperature (°C)	12.0	12.0	12.0
Inorganic Constituents			
Aluminum	2,400	1,380	2,220
Antimony	--	--	--
Arsenic	--	--	--
Barium	974	382	454
Beryllium	--	--	--
Cadmium	7	9	13†
Chromium	23	58†	34
Cobalt	--	55	84
Copper	--	83	--
Iron	11,000†	41,900	13,000†
Lead	71†	66†	128†
Manganese	4,940†	1,640†	4,220†
Mercury	--	--	--
Nickel	--	68	77
Selenium	--	--	--
Silver	--	12	15
Tellurium	--	--	--
Vanadium	--	--	--
Zinc	269	209	316
Organic compounds			
Priority pollutant			
Di-n-butyl phthalate	--	LT	--
Nonpriority pollutants			
2,4,6-Trimethyl-1,3,5-trioxane[1]	26	--	--
2-Ethyl-1-hexanol[1]	17	--	--
2-(2-Butoxyethoxy)-ethanol[1]	--	150	--
1,3-Dimethylbenzene[1]	--	--	26

[1] Tentative identification based on comparison with the National Bureau of Standards (NBS) library. No external standard was available. Concentration reported is semiquantitative and is based only on an internal standard. GC/MS spectra were examined and interpreted by GC/MS analysts.

† Exceeds USEPA criterion for maximum permissible concentration in drinking water or New York State standard for maximum concentration in ground water.

REF- 18

INTERVIEW FORM

INTERVIEWEE/CODE Mr. John Westendorf /

POSITION Environmental Engineer - WWTP

1100 Buffalo Ave

CITY Niagara FALLS STATE NY ZIP 14302

PHONE (716) 278-8138 RESIDENCE PERIOD _____ TO _____

LOCATION: _____ INTERVIEWER S. Robert STEELE, II

DATE/TIME 4/22/85 1 4^20 PM

SUBJECT: PHASE I INVESTIGATION OF NEW Road Landfill

REMARKS: The city of Niagara FALLS considered the New Road landfill site as a possible sludge disposal Area. In 1980, an extensive hydrogeologic investigation and Environmental Impact Statement was prepared for the site. The proposed sludge disposal project was approved, and a permit to construct was obtained. The proposed sludge disposal facility project was later abandoned. The City of Niagara FALLS may at some time in the future reconsider the New Road Landfill site for the construction of the sludge disposal area.

I AGREE WITH THE ABOVE SUMMARY OF THE INTERVIEW:

SIGNATURE: John R. Westendorf 4/30/85

COMMENTS:

APPENDIX B

PROPOSED UPDATED NYS REGISTRY SHEET

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE
INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

CLASSIFICATION CODE: 2a REGION: 9 SITE CODE: 932083

NAME OF SITE : New Road
STREET ADDRESS: New Road north of Porter Road
TOWN/CITY: COUNTY: ZIP:
Niagara Falls (c) Niagara

SITE TYPE: Open Dump-X Structure- Lagoon- Landfill- Treatment Pond-
ESTIMATED SIZE: Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: Power Authority of the State of NY
CURRENT OWNER ADDRESS.: Niagara Falls, NY
OWNER(S) DURING USE...: Power Auth. of NYS
OPERATOR DURING USE...: City of NF, Power Auth of NYS
OPERATOR ADDRESS.....: City Bldg., 745 Main St. NF NY 14305
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From 1950 To 1962

SITE DESCRIPTION:
The site was used by the City of Niagara Falls during the 1950's as a dump for non-combustibles and incinerators refuse. A fishkill in Gill Creek in 1954 or 1955 was attributed to the leachate from this site. PASNY used this site for disposal of rock spoils and clean fill from the power project excavations from 1958 to 1962.

USGS colected water samples from each of three monitoring wells at the site. Results indicate the presence of an organic compound in the samples in low concentration. The groundwater standard for iron was exceeded in all samples.

HAZARDOUS WASTE DISPOSED: Confirmed- Suspected -X

TYPE	QUANTITY (units)
None Known	

SITE CODE: 932083

ANALYTICAL DATA AVAILABLE:

Air- Surface Water-X Groundwater-X Soil- Sediment- None-

CONTRAVENTION OF STANDARDS:

Groundwater-X Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE..: None X State- Federal-
STATUS: In Progress- Completed-

REMEDIAL ACTION:

Proposed- Under Design- In Progress- Completed-
NATURE OF ACTION: None X

GEOTECHNICAL INFORMATION:
SOIL TYPE: Top Soil and fill overlying clay and silt.
GROUNDWATER DEPTH: Appox. 7'

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

USGS analysis of water samples indicates the presence of organic contaminants in the samples. More investigation is required to determine and confirm the presence of the organic compounds in the groundwater.

ASSESSMENT OF HEALTH PROBLEMS:

Insufficient Information

PERSON(S) COMPLETING THIS FORM:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NAME.: Abul Barkatr.
TITLE: Sr. San. Engineerg.

NAME.: Peter Buechi
TITLE: Ass. San. Engineer

DATE.: 01/24/85

NEW YORK STATE DEPARTMENT OF HEALTH

NAME.: Ronald Tramontano
TITLE: Bur. Tox. Subst. Assess.

NAME.:
TITLE:

DATE.: 01/24/85